By William Weinfeld ☆

Income of Physicians, 1929-49

This is the third detailed article on professional incomes published by the Office of Business Economics since 1944. It brings up to date the information on physicians' incomes in the October 1948 *Survey of Current Business*, which provided data through 1941. The first article of the series (in the August 1949 issue of the *Survey*) discussed lawyers' incomes from 1929–48. The second (in the January 1950 issue) covered dentists' incomes from 1929–49. In addition, a brief article in the July 1950 issue provided 1949 data for the first time for dentists and lawyers.

PHYSICIANS engaged in civilian practice in the United States—including salaried as well as independent practitioners, but excluding interns, residents, and teachers—reported an average net income of $11,058, before taxes, in 1949.

Physicians whose major source of medical income was from independent practice averaged $11,858, whereas salaried physicians—excluding interns and residents—averaged $8,272.

In the 20-year period since 1929, the average net income of all civilian physicians more than doubled, but this relative increase was practically identical with that for all earners in the general population over the same period.

Physicians who were members of partnerships reported an average net income of $17,722 in 1949 as against $10,895 for those not practicing as members of partnerships. However, only one out of every seven independent practitioners in the United States was a member of a partnership.

Among independent physicians, full specialists reported an average net income of $15,014 for 1949. This was 70 percent more than the average income of $8,835 reported by general practitioners. Part specialists were in between with $11,758. The income difference between general practitioners and full specialists has narrowed appreciably since 1929. Neurological surgeons, with an average net income of $28,628, had the highest incomes among full specialists in 1949. Pathologists, with $22,284, and gynecologists, with $19,283, followed.

Regionally, physicians' incomes were—on the average—highest in the Far West and lowest in New England. The highest average incomes earned by independent practitioners were found not in the largest cities, but in places of about 350,000 population. Their average net incomes in cities of more than a million population were less than those in all other size groups except places with fewer than 2,500 inhabitants.

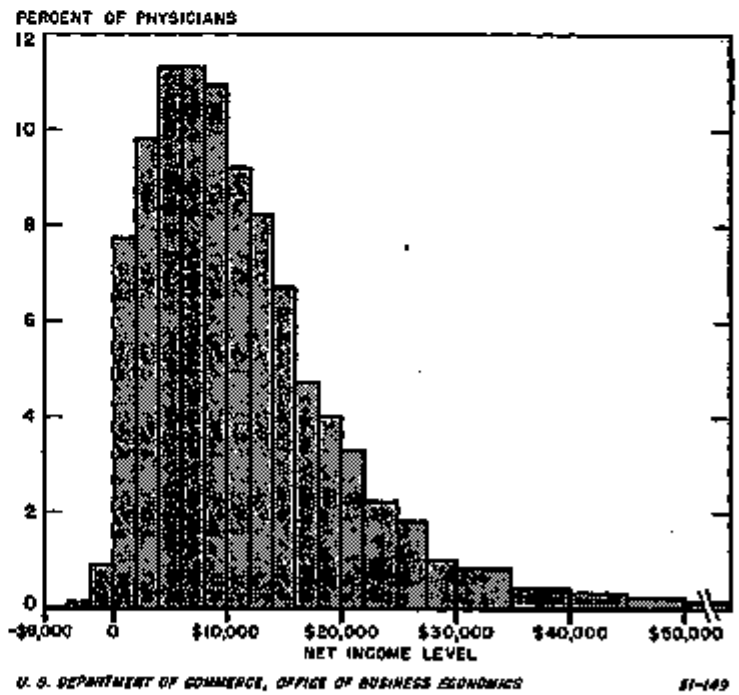
Independent practitioners reached their peak average earnings ($14,967) between 45 and 50 years of age. Salaried physicians reached their peak income ($10,226) roughly at the same age.

Extensive Survey of Physicians' Incomes

These are some of the highlights of a recent Nation-wide survey of physicians' incomes made in 1950 by the Office of Business Economics of the Department of Commerce, in cooperation with the Bureau of Medical Economic Research of the American Medical Association. In all aspects of the collection of information, the two agencies worked closely together—in the design of the questionnaire; in the selection, addressing, and mailing of the sample cases; and in the effort necessary to achieve the high response that was realized. The tabulation and analysis of the data presented in this article were the sole responsibility of the Department of Commerce. Although the Department also had the benefit of the AMA's suggestions and comments on its analysis, the AMA assumes no responsibility for any statements made in this article.

The full cooperation of the American Medical Association in every phase of this survey is gratefully acknowledged.

PERCENTAGE DISTRIBUTION OF NONSALARIED PHYSICIANS BY NET INCOME LEVEL, 1949



Covering the period 1945–49, inclusive, this is the fifth, large-scale, sample survey of economic conditions in the medical profession conducted by the National Income Division of the Office of Business Economics. Further

NOTE: MR. WEINFELD IS A MEMBER OF THE NATIONAL INCOME DIVISION, OFFICE OF BUSINESS ECONOMICS. MISS JEANNE STIEFEL OF THAT DIVISION ASSISTED MATERIALLY IN PREPARING THE TABULATIONS USED IN THIS ARTICLE.

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details on the nature and scope of the survey will be found in the Technical Notes at the end of the article.

It is a pleasure to acknowledge at this point the debt owed to the 55,000 physicians throughout the country whose voluntary and generous cooperation in filling out and returning their income questionnaires made the present study possible. In the history of these surveys of the major independent professional groups made by the National Income Division, no other survey has attained such a high rate of response—42 percent—or even approached it. This remarkable record on the part of America's physicians is indeed noteworthy, and we are certain that this cooperation will be rewarded by this most extensive body of information on major aspects of the economics of the profession.

Trends in Average Incomes

Physicians versus other workers

From 1929 to 1949 average net income[1] of all civilian physicians—excluding interns, residents, fellows, medical school personnel, and physicians in the armed forces—doubled, climbing from $5,304 to $11,058.[2] During the same period, all earners in the general population (wage and salary workers, as well as independent business and professional workers) recorded almost the identical relative increase (109 as compared with 108 percent) as all physicians.

The increase in dollar incomes of physicians since 1929 represents a very substantial increase in "real" incomes. No indexes are available covering the cost of living of professional persons, but it is probable that no more than half of the increase was offset by higher prices, since the consumer price index, based upon a wage earner's budget, was up about two-fifths over 1929 prices.

Physicians versus other professionals

With available current data, it is possible to make approximate comparisons of the incomes of independent practitioners in the medical, legal, and dental fields.[3] Since most of the members of these groups are in independent practice, the comparisons are significant. Approximately two-thirds of the physicians are nonsalaried, a slightly smaller proportion of the lawyers, and nearly nine-tenths of the dentists.

In 1929, nonsalaried physicians earned—on the average—roughly the same income as nonsalaried lawyers, but currently physicians have larger average incomes. In terms of *mean*[4] net income, lawyers were slightly above physicians through 1940, but since then have dropped considerably behind. In terms of *median* net income, however, lawyers have been lower than physicians all through the 1929–49 period. From 1929–49, the mean net income of nonsalaried physicians increased by 125 percent. In contrast during the same period the mean net income of nonsalaried lawyers rose from $5,534 to $8,083, a 46 percent increase.

Unlike lawyers, dentists have had lower median *and mean* net incomes than physicians throughout the 1929–49 period. However, whereas in 1929 the median income of nonsalaried physicians was only slightly higher than that of dentists, two decades later it was more than 50 percent greater. Nonsalaried dentists advanced from a mean net income of $4,267 to one of $7,146, for a 67 percent increase.[5]

Average income and the business cycle

The average net income of nonsalaried physicians (like that of other professionals) has followed a course closely similar to the trend in general economic conditions.[6] (See table 1.) Thus, with the onset of the depression late in 1929, physicians' incomes started to decline, reaching their low point in 1933 (mean, $2,948), by which time they were some 44 percent lower than their 1929 peak. Dentists' incomes fell somewhat more than physicians' (49 percent), but lawyers' incomes fell considerably less (30 percent) than either. Since then, physicians' incomes have increased steadily, with a marked acceleration during the war years, followed by a much slower rise in the postwar period. Two exceptions to the general trend already described were the slight set-back in 1938 as a result of the recession, and the drop in 1946 when most physicians in the armed forces returned to civilian life.

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[1] If interns, residents, and fellows were included in the concept of civilian physicians, the average net income of all physicians would be lowered by perhaps 10 percent.

The 1929 figure is from: Maurice Lovell, *The Incomes of Physicians*, University of Chicago Press, Chicago, 1933, table 1, p. 29.

[2] The term net income, as used throughout this article, is defined as salaried income from medical work plus net income from independent medical practice. The latter item consists of gross income less the costs of independent practice. All nonmedical income is excluded, and all income is before the payment of income taxes.

Examples of "costs of independent practice" as given on the questionnaire are: "Salaries and wages paid to your professional and nonprofessional employees before income tax, Social Security, or other deductions; office rent, heat, light, etc.; cost of materials and supplies other than long-time equipment; depreciation on (but not original cost of) long-time equipment; cost of laboratory services rendered by outside firms; and other miscellaneous costs, such as telephone and other service costs."

Although the precise data are not available, the 1949 average net income for all physicians was something less than 184 percent above the corresponding figure for the base period 1935–39.

[3] The available data are usually in terms of "nonsalaried" rather than "major independent," but these two groups generally differ by very little.

An independent physician or practitioner (the "major independent" category in the tables) is one whose major source of medical income is from independent practice. Thus, this concept includes nonsalaried physicians as well as part-salaried physicians whose major source of medical income is from independent practice. A nonsalaried physician is one whose sole source of medical income is from independent practice.

A salaried physician (the "major salaried" designation in the tables) is one whose major source of medical income is from salaried practice. Thus, this concept includes all-salaried physicians as well as part-salaried physicians whose major source of medical income is from salaried practice. An all-salaried physician is one whose sole source of medical income is from salaried practice. Salaried physicians exclude interns, residents, etc. (See below.)

Unless otherwise indicated, all the statistics presented in this article for the years 1945–49 exclude (1) physicians who received most of their medical income from a medical school; (2) physicians in the armed forces; (3) interns; (4) residents and fellows; and (5) all physicians who were retired or were engaged exclusively in nonmedical work in the year in question (i. e., who received no gross income from medical fees and no medical salary). "Medical work" was defined as work normally done by a physician, including the practice of medicine for fee or salary and medical administration.

[4] All the comparisons made in the article up to this point have been in terms of the (arithmetic) mean—the most common measure of average or typicality—often called simply the "average." The mean income is the sum of all incomes divided by the number of income recipients. A second important measure of average—but one in less common usage—is the median. We may define the median income as that income below which (and above which) half of all the income recipients fall.

The exclusive use of the more common measure of average (i. e., the mean) is often not adequate, and, indeed, may be misleading. For example, in comparing the average net incomes of physicians and lawyers, the presence of a relatively small number of very high-income lawyers could cause the *mean* net income of lawyers to be larger than that of physicians *even though most lawyers had lower incomes than most physicians.* (See below.) The median, on the other hand, is not affected by a few high-income cases (whether gains or losses). The summary description of a body of economic data in terms of the median, when taken together with that in terms of the mean, often serves to provide a better understanding of the nature of the materials under study.

Thus, we find that from 1929 to 1949 the *median* net income of nonsalaried physicians increased even more than their *mean* net income—climbing from $3,768 in 1929 to $8,691 in 1949, an advance of 154 percent (as compared with 125 percent increase in the mean).

Before 1941 the very high net incomes earned by a relatively small number of lawyers were enough to pull lawyers' *mean* incomes above those of physicians, in spite of the fact that most lawyers had smaller incomes than most physicians (as reflected by the value of the medians). Since 1941, however, even the extreme cases were not sufficient to maintain the earlier situation, and as a consequence physicians have had both higher mean *and median* net incomes than lawyers annually from 1941 through 1949.

[5] In terms of mean net income, nonsalaried lawyers ($8,083) in 1949 ranked a poor second behind physicians ($11,744), while dentists ($7,146) ranked third. In terms of *median* net income, on the other hand, dentists ($6,140) were a poor second behind physicians ($9,691), with lawyers ($5,787) trailing dentists.

[6] In all tables based on the present survey, a physician in active practice is treated as one person for a given year, regardless of the number of months he was in active practice during that year. Likewise, the income represents the actual amount he earned during the year, and not the amount he might have earned had he worked the full year. In 1946, with so many physicians working for only part of the year—after leaving the armed forces—mean net income on a year-equivalent basis was somewhat larger than on the unadjusted basis given in the text. For other years, the differences were much smaller.

The comparative figures on mean and gross net income of nonsalaried physicians on the two bases are given below:

Item	1945	1946	1947	1948	1949
Net income:					
Mean income per different physician	$10,075	$10,203	$10,725	$11,327	$11,744
Mean income per year-equivalent physician	11,302	10,857	11,020	11,572	12,069
Gross income:					
Mean income per different physician	17,360	16,550	17,742	18,021	19,710
Mean income per year-equivalent physician	17,907	17,597	18,244	19,496	20,254

Table 1.—Average Gross and Net Incomes of Nonsalaried Physicians, 1929–49 [1]

Year	Mean income		Ratio of mean net to mean gross income (percent)	Median net income [3]	Percent by which mean net exceeds median net income [4]
	Gross [2]	Net [3]			
	$	$		$	
1929	8,507	5,224	61.4	3,758	39.0
1930	8,179	4,870	59.6	(5)	(5)
1931	7,101	4,178	58.1	(5)	(5)
1932	5,776	3,179	55.0	(5)	(5)
1933	5,368	2,938	54.9	(5)	(5)
1934	6,071	3,392	57.0	(5)	(5)
1935	6,205	3,606	58.2	(5)	(5)
1936	7,020	4,204	60.0	3,234	30.0
1937	7,226	4,295	59.6	3,220	32.7
1938	7,053	4,093	58.0	3,027	35.2
1939	7,201	4,229	58.2	3,083	37.2
1940	7,632	4,447	58.2	3,245	36.9
1941	8,534	5,047	59.2	3,730	34.4
1942	10,000	6,715	61.4	(5)	(5)
1943	13,414	8,370	62.4	(5)	(5)
1944	16,387	9,602	63.7	(5)	(5)
1945	17,350	10,975	63.2	8,073	35.9
1946	16,530	10,202	61.7	7,523	35.6
1947	12,742	10,725	60.1	8,250	30.0
1948	15,821	11,327	60.0	8,030	36.7
1949	16,710	11,744	60.0	9,561	22.8

[1] Data presented here and elsewhere in this article on physicians' incomes for the period 1929 through 1941 are for the most part from Edward F. Denison and Alvin Shiter, "Incomes in Selected Professions: Part 4, Medical Service," SURVEY OF CURRENT BUSINESS, October 1943, and Edward F. Denison, "Incomes in Selected Professions: Part 6, Comparison of Incomes in Nine Independent Professions," SURVEY OF CURRENT BUSINESS, May 1944. The 1929 median net income was estimated by the present author by applying the ratio (1.300) between the mean ($5,700) and the median ($4,100) as given by Lovejoy to Denison's mean ($8,224). See Maurice Leven, *The Incomes of Physicians*, University of Chicago Press, Chicago, 1932, table 5A, p. 100. This ratio accords well with that calculated from Friedman and Kuznets: the mean for independent physicians for 1929 ($5,010) divided by the median ($4,223) gives a ration of 1.401. See Milton Friedman and Simon Kuznets, *Income from Independent Professional Practice*, National Bureau of Economic Research, New York, 1945, table 10, p. 101. Figures for 1942–44 are estimated. Figures for 1945–49 are from the 1950 Survey of the Medical Profession.

[2] Wherever used in this article the term "gross income" refers to the gross receipts of independent physicians from medical work; it always excludes salaries received as a physician-employee, as well as receipts from nonmedical work.

The median gross incomes of nonsalaried physicians are available only for the years 1945–49, and are as follows: 1945—$12,877; 1946—$12,427; 1947—$13,779; 1948—$15,610; 1949—$16,168.

[3] As used in this article the term "net income" refers to the incomes of physicians from medical work after the deduction of business expenses, but before the deduction of income taxes. It includes salaries received as a physician-employee, if such were earned (nonsalaried physicians receive no salaries), but excludes receipts from nonmedical work. For a more detailed definition, see footnote 2 in the text.

[4] Figures on the standard deviation for net income are available only for the years 1945–49, and are as follows: 1945—$10,306; 1946—$8,791; 1947—$9,704; 1948—$10,901; 1949—$9,917. The coefficient of variation (in percent) for the same years is: 90.0; 94.0; 90.5; 83.3; and 82.6, respectively. (See footnotes 3 and 4 in table 3 for explanations of these two measures.)

[5] Data not available.

Source: U. S. Department of Commerce, Office of Business Economics.

Trend in the Supply of Physicians

Between 1929 and 1940 the number of physicians in independent practice in the United States increased from 119,000 to 129,000. By 1941, however, the number of physicians in civilian practice started a sharp decline as some 60,000 were eventually recruited from civilian life to serve with the armed forces.[7] Despite the adoption of accelerated programs of undergraduate training and the return of many retired physicians to active practice, the number of physicians in civilian practice continued to decline through the summer of 1945. With the end of the war, however, the rapid demobilization of men from the armed forces quickly increased the number of physicians in independent practice again.

As this article goes to press, we have very little reliable data on the number of physicians in civilian practice. According to decennial census data, there were 153,803 physicians in active practice in the United States in 1930 and 165,629 in 1940. These figures include interns, residents, fellows, and physicians in the armed forces, as well as independent and salaried practitioners. The comparable figure for 1950 is as yet unknown, but because of the accelerated training of physicians during World War II, it may be as high as 190,000.[8] Of this number, about 7,250 are interns and approximately 17,500 are residents or fellows.[9] There were perhaps 160,000 physicians in active civilian practice, exclusive of interns and residents, in the United States in 1949. Ten years earlier the comparable figure was about 150,000, in addition to which there were about 7,000 interns, about 6,000 residents and fellows, and some 2,500 in the armed forces.[10]

Trend in the Costs of Practice

Lack of space forbids more than a brief mention of the findings on the costs of practice. Between 1945 and 1949, payroll expenses and other costs incurred by physicians were an increasing proportion of gross income, with the result that the net-to-gross income ratio declined steadily during the 5-year period from 63.3 to 59.6 percent. Payroll expenses were roughly one-tenth of gross, all other costs about one-fourth. Table 2 presents these data in more detail.

Income Differentials Among Physicians

An average is primarily a shorthand device for reducing the complexity of a wide range of figures to a single figure that the mind can more easily grasp. Therefore, it is also important to study the income distribution itself, as well as the absolute and relative variations among the incomes.

Physicians' net incomes, as reported in the current survey, ranged from a loss of about $5,000 to a net profit of more than $200,000. (*Gross* incomes reported by physicians ranged from about $100 to $550,000.) Almost one out of every 100 physicians reported a net loss in 1949. One out of every 14 made less than $2,000 net income; almost one out of 4 made less than $5,000. At the other extreme, 1 out of 8 made over $20,000, while 1 out of 15 reported over $25,000. (See table 3 and the preceding bar diagram.)

Despite large fluctuations during the depression years, physicians' incomes have shown a strong tendency to become less unequally distributed since 1929. (See Lorenz curves.) Since 1946, particularly, the decline in the coefficient of variation—one measure of relative dispersion—has been most marked. (See table 1, footnote 4.)

Factors Making for Income Differentials

What are the important factors affecting the amount of income which different physicians receive? Clearly, some of the potentially significant factors—e. g., personality, business acumen, health, ambition and drive, mental aptitude, physical skill, and family connections—cannot be too readily measured.

Nevertheless, the present study probably does cover one of the largest groups of diversified factors associated with professional income size yet analyzed by the Department of Commerce. Thus, it is possible to consider the relationship between physicians' incomes and such significant factors as form of practice (independent versus salaried; partners versus nonpartners), degree and field specialization, geographic location (region and State), size of community, full-time versus part-time practice, age, and sex.

[7] Whereas in 1940 only about 2,500 physicians were on active duty with the armed forces, by 1945 the number on active duty had mushroomed to approximately 60,000. By 1940 it had dropped to about 7,000. These figures are not restricted to physicians who were in independent practice in civilian life; they also include salaried physicians, interns, residents, and fellows.

[8] The *American Medical Directory, 1950* (published by the American Medical Association) gives a figure of 201,277 living physicians in continental United States (as of about July 1949). Of these, some 9,700 are reported to be retired or not in practice (*op. cit.*, tables 1 and 3, pp. 9 and 11).

[9] See: "Approved Internships and Residencies in the United States, 1950," *Journal of the American Medical Association*, April 15, 1950, pp. 1146 and 1148.

[10] For data on interns and residents, see *Journal of the American Medical Association*, June 20, 1942, p. 601. Data on the armed forces were estimated.

Table 2.—Average Gross Income, Net Income, and Expenses of Physicians by Source of Medical Income, 1945–49

Item [1]	1945	1946	1947	1948	1949
All physicians					
Mean amount:					
Total net income	$10,242	$9,403	$10,112	$10,634	$11,058
Median amount:					
Total net income	7,509	7,012	7,791	8,208	8,835
Nonsalaried physicians					
Mean amount:					
Gross income	17,350	16,530	17,742	18,921	19,710
Payroll expenses	1,924	1,060	2,187	2,430	3,008
Other costs of practice	4,551	4,368	4,829	5,164	5,379
Net income	10,075	10,202	10,720	11,327	11,744
Median amount:					
Gross income	12,877	12,427	13,770	15,040	16,108
Net income	8,073	7,323	8,200	8,689	9,501
Percentage of gross income:					
Gross income [2]	100.0	100.0	100.0	100.0	100.0
Payroll expenses	11.1	11.0	12.3	12.8	13.2
Other costs of practice	25.7	25.4	27.2	27.3	27.2
Net income	63.3	61.7	60.5	60.0	60.0
Part-salaried physicians					
Mean amount:					
Gross income	$11,762	$11,384	$12,109	$13,470	$12,781
Payroll expenses	1,248	1,230	1,447	1,444	1,424
Other costs of practice	3,614	3,487	3,763	4,029	4,036
Net income from independent practice	6,900	6,667	6,899	7,003	7,310
Salaried income	3,018	2,869	3,230	3,435	3,600
Total net income	9,918	9,430	10,100	10,438	10,926
Median amount:					
Gross income	7,803	7,455	7,970	8,347	8,908
Net income	7,740	7,208	7,906	8,006	8,780
All-salaried physicians					
Mean net income	7,068	6,628	7,459	7,843	8,474
Median net income	6,193	5,766	6,607	7,258	7,678

[1] The term "gross income" always excludes salary income. "Net income" is gross income from independent practice less business expenses plus salary income, if any, before taxes. For more detailed definitions of these terms, see the footnotes to table 1.

Part-salaried and all-salaried physicians *exclude* medical school personnel, physicians in the armed forces, and interns, residents, and fellows. See footnote 1, table 3, for a more detailed statement.

[2] Detail will not necessarily add to total because of rounding.

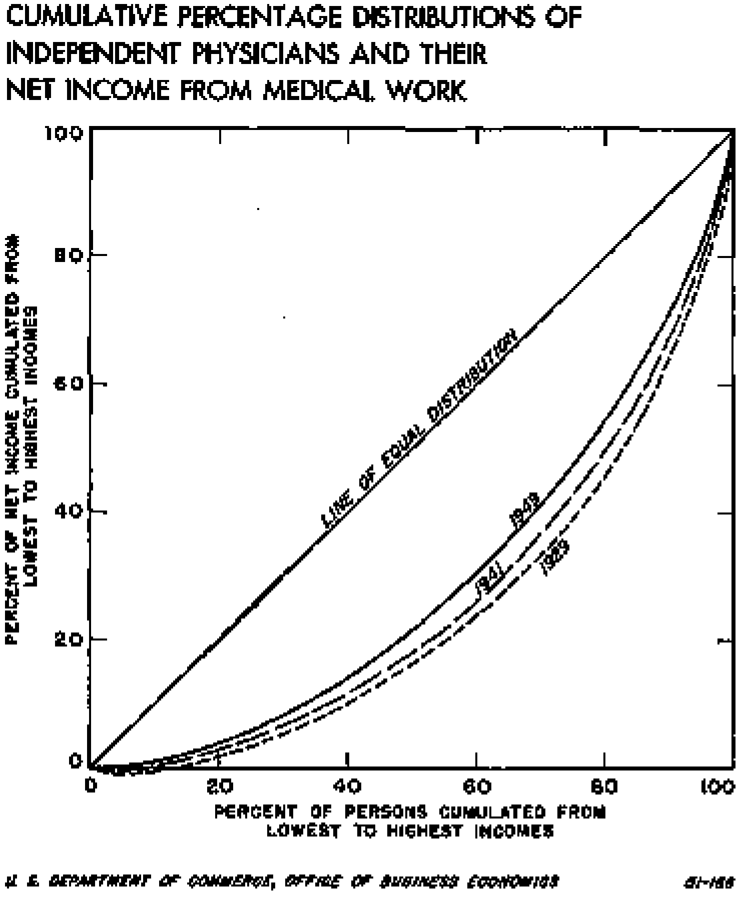
Source: U. S. Department of Commerce, Office of Business Economics.

Form of practice

Independent versus salaried.—At the present writing, figures are not yet available from the 1950 Census giving the proportion of independent and salaried physicians. In 1940 the Census reported that 22.1 percent of all physicians (including those in the armed forces, as well as interns and residents) were salaried.[11] If we deduct an estimated 2,500 armed forces physicians, 7,219 interns, and 6,149 residents and fellows,[12] we find that only 13.8 percent of the physicians (the concept used in this article) were salaried in 1940. Among respondents to the current survey, 22.3 percent of the physicians in the United States in 1949 were engaged in salaried work. To what extent this figure is a reliable reflection of the actual 1949 situation, we do not now know.[13]

Physicians in independent practice earn considerably more than salaried physicians. This difference holds true not only for the country as a whole, but—what is more significant—appears to hold consistently [14] even for physicians practicing in the same city, and seems also to persist for those within a given city who are in the same age group and have the same degree of specialization. In 1949, for the country as a whole, independent physicians earned a mean net income of $11,858 as compared with $8,272 for salaried physicians. The comparable medians ($9,668 and $7,555) indicate a much smaller though still substantial difference.

Differences in average income between independent and salaried physicians seem even more marked in many cities than for the country as a whole; indeed, for some cities they are quite striking. The average net income of independent physicians is twice that of salaried physicians in some places. Of course, since salaried physicians in a given city tend to be younger than their independent colleagues, part of the observed income differences are due to age differences. However, significant income differences tend to exist between independent and salaried physicians even if size of community, age, degree of specialization, and sex are all held constant. It seems fairly certain, too, that these differences are not constant, but vary considerably from city to city.



In 1929, although the *mean* net income of independent practitioners for the country as a whole was 21 percent *more* than that of their salaried colleagues, their *median* net income was 21 percent *less*.[15] In 1949, on the other hand, independent physicians had considerably larger incomes than salaried physicians, both in terms of the mean (43 percent greater) and the median (28 percent greater).

The income size distributions for independent and salaried physicians differ quite markedly. Independent physicians

[11] Bureau of the Census, *Population: Volume III, Labor Force; Part 1, United States Summary*, Washington, D. C., 1943, pp. 99; 100–1; 103; 120–1; 124–5. Percentage calculated from data given in these pages.

[12] *Journal of the American Medical Association*, June 20, 1942, p. 651.

[13] There is some reason to believe that because it is easier for salaried than for independent physicians to fill in an income questionnaire, we normally get some over-representation of salaried physicians in our surveys. However, the proportion of salaried physicians, according to the results from the survey's gross returns (see Technical Notes), does not seem to have increased unreasonably from 1940–49: 1940—13.8 percent (U. S. Census); 1945—18.9; 1946—20.9; 1947—21.4; 1948—21.7; 1949—22.3.

[14] In a few of the largest cities, however, the advantage of the average independent over salaried physician (especially in terms of the median) almost vanishes. In 1949, for example, in New York City the median net income of independent physicians was $7,107, of salaried $6,821; for Boston the comparable figures were $8,400 and $7,833.

[15] Leven, op. cit., table 1, p. 20.

show no large concentration of cases within any narrow range, while salaried physicians do. Independent physicians also have a disproportionately large number of cases (as compared with salaried physicians) in the upper income brackets, as well as—to a much lesser extent—in the lower income brackets.

For example, 12.8 percent of the independent practitioners made less than $3,000 in 1949, whereas only 8.8 percent of the salaried physicians were as poorly off. On the other hand, 27.3 percent of the independent practitioners made over $15,000, whereas only 7.3 percent of the salaried physicians made as much. And 8.3 percent of the independents reported over $25,000 net, but only 1.2 percent of the salaried physicians did. (See table 3.)

Table 3.—Percentage Distribution of Physicians by Source of Medical Income and Net Income Level, 1949

Item	All physicians [1]	Physicians with major source of medical income from—		Physicians with entire source of medical income from—		
		Independent practice	Salaried practice	Non-salaried practice	Part-salaried practice	All-salaried practice
Number reporting [2]	29,878	23,213	6,605	19,900	5,013	4,850
Percent in each group	100.0	77.7	22.3	66.6	16.8	16.8
Mean net income	$11,058	$11,858	$8,272	$11,744	$10,928	$8,434
Median net income	$ 8,835	$ 9,088	$7,555	$ 9,031	$ 8,700	$7,578
Absolute dispersion of net income [3]	$ 6,170	$ 6,886	$5,060	$ 6,817	$ 6,211	$4,643
Relative dispersion of net income [4]	82.9	83.5	81.4	83.5	85.2	87.4
NET INCOME LEVEL [5]	Percentage distribution by net income levels					
Loss: $1–$5,000	0.8	0.9	0.5	1.0	0.7	
$0–$999	2.7	2.1	1.4	3.5	1.4	1.0
$1,000–$1,999	4.8	4.0	2.9	4.2	3.0	2.2
$2,000–$2,999	4.6	4.6	4.0	4.6	3.3	3.1
$3,000–$3,999	5.2	5.1	5.8	5.0	6.2	5.0
$4,000–$4,999	6.9	6.7	7.3	6.8	6.5	6.7
$5,000–$5,999	6.2	5.7	7.9	5.5	7.2	7.8
$6,000–$6,999	7.2	6.3	12.4	6.8	7.1	13.5
$7,000–$7,999	7.5	6.9	14.0	6.5	7.0	15.7
$8,000–$8,999	7.0	6.9	10.5	6.0	6.8	11.3
$9,000–$9,999	5.4	5.0	6.9	4.9	6.5	7.3
$10,000–$10,999	5.8	5.3	7.6	5.2	5.4	8.1
$11,000–$11,999	4.2	4.0	4.7	3.9	4.6	5.1
$12,000–$12,999	4.6	4.9	3.8	4.8	4.9	3.8
$13,000–$13,999	3.0	3.4	1.6	3.4	3.3	1.9
$14,000–$14,999	2.9	3.3	1.3	3.3	2.9	1.1
$15,000–$15,999	3.1	3.4	1.5	3.4	3.1	1.6
$16,000–$16,999	2.3	2.7	.8	2.6	2.4	.7
$17,000–$17,999	1.8	2.1	.9	2.1	1.9	.8
$18,000–$18,999	2.0	2.3	.8	2.3	1.8	.8
$19,000–$19,999	1.4	1.7	.4	1.7	1.5	.3
$20,000–$20,999	1.7	2.0	.7	2.1	1.3	.7
$21,000–$21,999	1.1	1.3	.2	1.3	1.2	.2
$22,000–$22,999	1.3	1.4	.3	1.4	1.3	.3
$23,000–$23,999	.9	1.1	.1	1.1	.8	.1
$24,000–$24,999	.8	1.0	.1	1.0	.9	.2
$25,000–$27,499	1.8	2.2	.3	2.2	1.5	.3
$27,500–$29,999	1.0	1.2	.3	1.2	1.0	.2
$30,000–$34,999	1.7	2.0	.4	2.0	1.4	.4
$35,000–$39,999	.9	1.1	.1	1.0	.9	.1
$40,000–$44,999	.6	.7	.1	.7	.6	.1
$45,000–$49,999	.3	.4		.4	.3	
$50,000–$74,999	.6	.8	.1	.9	.4	.1
$75,000 and over	.1	.2		.1	.1	
Total [6]	100.0	100.0	100.0	100.0	100.0	100.0

[1] Unless otherwise indicated, all the statistics presented in this article for the years 1946–49 exclude (1) physicians who received most of their medical income from a medical school; (2) physicians in the armed forces; (3) interns; (4) residents and fellows; and (5) all physicians who were retired or were engaged exclusively in nonmedical work in the year in question (i. e., who received no gross income from medical fees and no medical salary). "Medical work" was defined as work normally done by a physician, including the practice of medicine for fee or salary and medical administration.

[2] These figures refer to the number of tabulated cases, not to the actual number who reported. However, in this survey the difference between these two figures is negligible for all practical purposes.

[3] The measure of *absolute* dispersion used here is the standard deviation. This measure indicates the extent of *absolute* income dispersion (or spread) around the mean net income. If all incomes were the same, the dispersion would be zero.

[4] The measure of *relative* dispersion used here is the coefficient of variation, which is the standard deviation divided by the mean, expressed as a percentage. This gives a standardized measure of the *relative* amount of income dispersion, permitting the direct comparison of income spread among various groups or for different years.

[5] "Net income" is gross income from independent practice less business expenses plus salary income from salaried practice. It is always net income before taxes. For a more detailed definition, see footnote 2 in the text.

[6] Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

Specific type of work or form of organization.—In 1949 the largest single group among physicians reporting in the present survey was independent physicians who practiced without partners. This group comprised two-thirds of all physicians. About one out of six of these physicians shared office costs or assistants. The second largest group—independent physicians who are members of partnerships—represented only 14 percent of the independent physicians. (By contrast we find that a much *larger* proportion of lawyers were members of partnerships—26 percent—but a considerably *smaller* percentage of dentists—3 percent.) [16] Further details will be found in table 4.[17]

Table 4.—Average Net Income of Physicians by Specific Type of Work in Which Engaged, 1949

Specific type of work [1]	Percent of physicians—		Mean net income	Median net income
	In each detailed category	Within major categories		
Major independent:				
Without partners			$10,695	$8,827
Not sharing costs	55.6	71.8	10,514	8,749
Sharing costs	10.9	14.0	12,340	10,383
Partnership [2]	11.0	14.2	17,722	15,428
Total [3]	77.7	100.0	11,858	9,088
Major salaried:				
Employed by one or more independent physicians not in private group practice	3.3	10.2	7,045	6,289
Employed by physicians in private group practice	2.1	6.3	10,024	8,557
Industrial service	2.3	9.9	9,370	8,340
Non-Federal hospital	6.1	22.7	9,327	7,836
Federal civilian hospital	3.1	13.3	8,164	7,532
Nonprofit organization [4]	1.8	7.0	9,016	7,639
State or local gov't. (excl. hospitals)	3.0	12.4	8,495	6,498
Federal civilian agency (excl. hospitals)	3.1	12.7	7,879	7,664
Total [3]	22.3	100.0	8,272	7,555
All physicians [3]	100.0		11,058	8,835

[1] Only 1.7 percent of the physicians failed to report on this item.

[2] About 0.7 percent of all physicians are members of 2-partner firms, and 4.3 percent are members of firms having 3 or more partners, or 11.0 percent of the physicians are members of partnerships of any size.

[3] Detail will not necessarily add to total because of rounding.

[4] Includes such groups as nonprofit foundations, cooperatives, trade unions, and medical societies.

Source: U. S. Department of Commerce, Office of Business Economics.

Physicians who practice as members of a partnership earn strikingly more than those who practice alone. In 1949, the former had a mean net income of $17,722, as against $10,895 for the latter. In terms of the median ($15,428 and $8,827, respectively), partners were in an even better position.

[16] William Weinfeld, "Income of Lawyers, 1929–48," SURVEY OF CURRENT BUSINESS, August 1949, table 7, p. 21.
William Weinfeld, "Income of Dentists, 1929–48," SURVEY OF CURRENT BUSINESS, January 1950, table 1, p. 8.

[17] Although this survey was not specifically designed to determine how many physicians—salaried as well as independent—there are in private group practice, some of its findings may throw a helpful light on this increasingly important field.
Approximately 13.1 percent of the civilian physicians who reported indicated that they were either independent physicians practicing in partnerships of two or more members or salaried physicians in private group practice (table 4). Of these, 11 percent were independent, and 2.1 percent were salaried. If we assume that partnerships having three members is the minimum requirement for a group, then two-man partnerships (which embrace 0.7 percent of all civilian physicians) do not qualify as groups. Accordingly, about 0.4 percent of the civilian physicians in the country (4.3 percent independent, and 2.1 percent salaried) were in private group practice in 1949.
Since the crude concept of a group that has been used here does not coincide with the concepts used by the U. S. Public Health Service and the American Medical Association, it is not possible to say whether their estimate of 2 percent for the percentage of practicing physicians engaged in group practice in the United States in 1949—and also in 1946) may be validly compared with the present estimate of 6 percent. But at least, the estimate of 6 percent is a first approximation.

As the size of a *law firm* increases, the income per member tends to increase. Lawyers having eight or more partners earn almost five times as much as solo practitioners.[18] For physicians the relationship is somewhat different. In 1949, nonsalaried physicians in two-partner firms had per capita net incomes roughly 50 percent larger than those who practiced without partners; and three-partner physicians had per capita incomes practically twice as large as those of their colleagues in individual practice. But beyond this point, an increase in the size of the firm had no noticeable effect: income per partner remained virtually unchanged even for physicians having eight or more partners. Indeed, if anything, it seemed to decline very slightly. (See table 5.)

Table 5.—Average Net Income of Nonsalaried Physicians by Size of Partnership, 1949 [1]

Size of "firm" (number of partners)	Percent of physicians in "firms" of specified size [2]	Percent of medical "firms" of specified size	Mean net income	Median net income	Mean gross income	Net-to-gross income ratio (percent)
None [3]	85.3	94.0	$10,704	$8,680	$18,171	59.2
2	6.3	4.5	16,097	14,236	26,550	62.9
3	2.5	.9	20,005	17,286	32,690	61.8
4	1.0	.3	18,103	16,800	30,700	59.1
5 or more [4]	1.0	.3	19,220	17,068	34,050	56.5
Total [5]	100.0	100.0	11,744	9,561	19,790	59.3

[1] All incomes in this table are "per physician," not "per partnership."
[2] These figures differ slightly from the corresponding figures of table 4 ("Without partners") because one table is in terms of nonsalaried physicians and the other is in terms of major independent.
[3] Approximately 0.5 percent of the nonsalaried physicians were in firms having 5 partners; 0.3 percent in firms of 6; 0.2 percent in firms of 7; 0.2 percent in firms of 8; and 0.7 percent in firms of 9 or more.
The mean and median net incomes of nonsalaried physicians in firms having 5 partners were $20,461 and $17,400, respectively; 6 partners, $19,750 and $16,875; 7 partners, $19,883 and $18,000; 8 partners, $18,000 and $15,750; and 9 or more partners, $18,231 and $16,700.
The mean gross incomes were $36,502 for 5 partners; $38,044 for 6; $30,441 for 7; $32,828 for 8; and $31,500 for 9 or more.
[4] About 0.9 percent of the nonsalaried physicians failed to report on size of firm. These were excluded from the percentage base, but not from the average incomes shown on the total line.

Source: U. S. Department of Commerce, Office of Business Economics.

The highest mean net income reported by salaried physicians ($10,024) went to those employed by physicians in private group practice. The second highest ($9,370) went to physicians in industrial service—i. e., to physicians employed by insurance companies, pharmaceutical companies, industrial firms, etc. Additional data are given in table 4.

Degree of specialization

In dentistry and law, specialization has always been quite uncommon. Specialization in medicine, although a modern phenomenon, was "an important factor in professional incomes and in the costs of medical care" even 20 years ago.[19]

Figures gathered on the subject by the AMA's *American Medical Directory*, 1950, and the present study would seem to indicate clearly that specialization has increased significantly in the last two decades, but the two sources differ somewhat as to the extent of the rise. (A full treatment of the differences is given in the Technical Notes.) If we accept Leven's figures for 1929 and those of the present survey for 1949 (both being unweighted as to degree of specialization, and both the product of mail questionnaire surveys), the following relationships emerge.

Considering all physicians, salaried as well as independent, the proportion of full specialists rose from 26 percent in 1929 to 46 percent 20 years later—a striking increase of 74 percent. General practitioners, on the other hand, declined from 53 percent of all physicians to 38 percent, a fall of 29 percent. Part specialists declined by 22 percent.

[18] Weinfeld, *loc. cit.*
[19] Leven, *op. cit.*, p. 50.

Considering only independent practitioners, the proportion of full specialists rose 75 percent—from 23 to 40 percent—about the same as for all physicians. General practitioners dropped from 56 to 41 percent, a fall of 26 percent. Part specialists declined by 13 percent.

As among dentists, there is more specialization among salaried than among independent practitioners.[20] In 1949, 65 percent of the salaried physicians were full specialists as against 40 percent for independents. Only 13 percent of the salaried physicians were G. P.'s, whereas 41 percent of the independents were G. P.'s. (See table 6.)

Specialization and urbanization are highly correlated. But the proportion of full specialists is not highest in the largest metropolitan cities. Instead, for independent practitioners, the greatest proportion of specialists is found in cities of between 100,000 and 1 million inhabitants, not in cities of over a million. In 1949, cities of over a million had about the same proportion of full specialists as medium-sized cities of 25,000–49,999.

It is interesting to note in table 6 the practically perfect regularity with which the proportion of independent G. P.'s drops as size of community increases, finally increasing for the first time in cities of 1 million or more. In places of under 1,000 population, 89 percent of the independent physicians were in general practice, while in places of 500,000–999,999 only 26 percent of the independents were G. P.'s; in cities of over a million 31 percent of the independents were G. P.'s. The picture for full specialists is

Table 6.—Percentage Distribution of Physicians by Degree of Specialization, Class of Worker, and Size of Community, 1949

Size of community (population) [1] [2]	Major independent				Major salaried				Other [3]
	Total number reporting	General practice	Partly specialized	Fully specialized	Total number reporting	General practice	Partly specialized	Fully specialized	
Under 1,000	1,153	88.7	7.8	3.6	207	20.8	7.5	62.0	8.5
1,000–2,499	1,381	84.9	12.5	1.7	176	30.3	11.4	42.0	7.4
2,500–4,999	1,272	73.6	20.3	5.6	228	26.3	12.2	54.2	8.4
5,000–9,999	1,538	59.9	24.4	15.6	352	18.8	11.1	60.8	9.4
10,000–24,999	2,230	45.0	24.1	30.6	549	14.8	12.8	62.5	10.2
25,000–49,999	2,020	30.7	20.4	48.8	966	10.8	8.8	70.6	12.1
50,000–99,999	2,048	20.5	18.5	62.0	571	10.9	8.2	69.0	11.8
100,000–249,999	2,505	20.5	20.2	57.3	709	10.4	9.9	63.6	16.1
250,000–499,999	1,883	26.1	14.8	59.1	503	8.9	10.3	65.7	15.1
500,000–999,999	2,411	25.7	15.7	58.6	960	6.6	5.3	71.1	17.1
1,000,000 and over	4,394	30.9	10.5	48.7	1,307	10.5	11.9	63.7	14.0
United States [4]	23,070	41.3	18.2	40.5	6,455	12.4	9.7	64.2	13.9

[1] Returns were classified by size of place on the basis of preliminary 1950 Census data made available to the National Income Division, through the courtesy of the Bureau of the Census, prior to publication.
[2] Details will not necessarily add to total because of rounding.
[3] Administrative personnel, for the most part.
[4] 36 physicians in independent practice did not report on size of community; 143 did not report on degree of specialization. For salaried physicians, the corresponding figures are 47 and 310.

Source: U. S. Department of Commerce, Office of Business Economics.

the reverse of that for the G. P.'s—with minor variations. Starting with fewer than 5 percent of the independents in places under 5,000 population,[21] the proportion rises to a peak of 59 percent in cities of 250,000–499,999, and then drops to 50 in cities of over a million.

Part specialists earn more, on the average, than general practitioners, and full specialists more than part specialists. Moreover, the same general relationship held 20 years ago—at least for independent practitioners—except that, relatively, the income gap between G. P.'s and full specialists has narrowed appreciably since then.[22] Among independent

[20] Weinfeld, *op. cit.*, table 6, p. 11.
[21] Places under 1,000 inhabitants have a larger percentage of independent specialists than places 1,000–2,499 (3.5 percent and 1.7 percent, respectively) perhaps because institutions are often located in the open country. This is more striking, of course, for salaried physicians.
[22] Leven, *op. cit.*, table 5A, p. 109.

Table 7.—Average Net Income of Physicians by Degree of Specialization, Class of Worker, and Size of Community, 1949

Size of community[1] (population)	Major independent						Major salaried[2]	
	General practice		Partly specialized		Fully specialized		General practice	Fully specialized
	Mean net income	Median net income	Mean net income	Median net income	Mean net income	Median net income	Mean net income	Mean net income
Under 1,000	$6,500	$6,456	$10,636	$8,200	$12,488	$9,600	$4,303	$7,288
1,000–2,499	8,481	7,643	10,102	8,618	11,885	8,009	6,674	7,784
2,500–4,999	10,378	9,205	12,737	12,477	13,370	11,126	7,009	7,957
5,000–9,999	10,580	9,336	13,275	12,185	13,153	11,357	5,924	9,617
10,000–24,999	9,674	8,670	14,202	12,871	13,840	12,443	6,253	9,324
25,000–49,999	9,414	7,770	13,139	11,033	14,867	13,280	6,635	10,028
50,000–99,999	9,400	7,909	12,680	10,273	15,514	13,401	6,355	9,287
100,000–249,999	8,670	8,091	11,214	9,441	15,771	13,272	5,845	8,937
250,000–499,999	9,537	8,204	13,246	11,000	16,608	14,210	5,709	8,250
500,000–999,999	8,478	6,039	10,635	9,217	15,862	13,000	6,465	9,007
1,000,000 and over	7,231	5,867	8,401	6,694	13,670	10,647	6,120	8,346
United States	8,835	7,428	11,758	9,902	15,014	12,609	6,281	8,884

[1] Returns were classified by size of place on the basis of preliminary 1950 Census data.
[2] The mean net incomes of the partly specialized (salaried) are as follows: $7,106 (under 1,000 population); 9,000; 7,017; 8,910; 7,234; 7,297; 7,100; 7,682; 6,260; 7,036; 6,205; and 7,135 (U. S.). The mean net incomes of "other" physicians are as follows: $7,241 (under 1,000); 6,082; 6,452; 5,107; 8,411; 7,020; 7,779; 5,570; 8,600; 8,080; 9,069; and 8,351 (U. S.).

Source: U. S. Department of Commerce, Office of Business Economics.

practitioners, in 1949, the mean net income of full specialists was $15,014, or 70 percent larger than the mean of $8,835 reported by general practitioners. (For dentists, in 1948, the difference was very similar: 75 percent.) Part specialists reported a mean net income ($11,758) about 33 percent larger than that of general practitioners.[23] (See table 7.)

Salaried physicians present a pattern that is similar to that of independent physicians, but the income gap between general practitioners and full specialists is much less marked, and the average income received by each degree of specialization among salaried physicians is significantly lower than for the corresponding category among independent practitioners. Thus, the mean net income of salaried full specialists in 1949 was $8,884, or 41 percent larger than the mean of $6,281 for G. P.'s. Part specialists had a mean ($7,135) about 14 percent larger.

[23] The figures on the net incomes of independent general practitioners, part specialists, and full specialists ($9,541; $11,416; and $14,442, respectively) as reported by *Medical Economics* for 1947 show a pattern very similar to that found in the present study. (William Alan Richardson, "Physicians' Incomes", *Medical Economics*, October 1948, p. 60.) Indeed, the correspondence is even closer than appears from the published figures, because *Medical Economics* excluded all physicians over 65 years of age, and most of those would be G. P.'s with low incomes.

In 1929 independent full specialists had a mean net income ($10,000) two and a half times larger than that of general practitioners ($3,900). The medians ($7,500 and $2,900, respectively) differed much the same as the means.[24] By 1949, the income gap between independent G. P.'s and full specialists had been halved.

Independent general practitioners earn their lowest mean net incomes in communities with under 1,000 population, then rise until they reach their peak (about $10,500) in places of 2,500–9,999 inhabitants, and finally slowly decline to $7,231 in cities of over a million (table 7). Independent full specialists, on the other hand, reach their peak average income ($16,608) in cities of 250,000–499,999, and then decline regularly to $13,670 in cities over a million.

Are the above-noted income differences between general practitioners and full specialists really due to degree of specialization or to other factors such as size of community and age? Apparently, the former. However, as can be seen from table 8, there are a few age-city size combinations in which independent general practitioners actually seem to make more money, on the average, than independent full specialists. But these are confined primarily to physicians under 35 years of age. Above 35, we find that regardless of age or city size, full specialists clearly tend to earn higher average incomes than general practitioners.

For all city sizes combined, the disparity between the incomes of full specialists and G. P.'s, in 1949, increased steadily as age increased until independent full specialists 65 years of age and over were earning two and one-half times as much as G. P.'s in the same age group. The income advantages of full specialists over G. P.'s seem to be largest (almost twice as large) in cities having more than 100,000 population (as well as in places having under 1,000 inhabitants) and smallest in places of 1,000–24,999, but in no community size does the full specialist fall behind the general practitioner.

Field of specialization

Let us first consider all full specialists. In 1949, according to the specialties reported to this survey,[25] every sixth full specialist was in internal medicine. The second largest group was in general surgery, with pediatrics third, obstetrics

[24] Leven, op. cit., table 5A, p. 100. No similar data for 1929 are available for salaried physicians.
[25] There is no exactly corresponding benchmark by which to compare the reported specialties, but the distribution under discussion agrees quite well with one based on table 4 of the *American Medical Directory, 1950* (pp. 12 and 13). The latter distribution apparently includes interns, residents and fellows, physicians in the armed forces, and medical school personnel—all of whom were excluded from the present study.

Table 8.—Mean Net Income of Physicians in General Practice and Fully Specialized Whose Major Source of Medical Income Was From Independent Practice, by Age Group and Size of Community, 1949

Size of community[1] (population)	General practice[2]									Fully specialized								
	Age group (years)									Age group (years)								
	All ages	Under 35	35–39	40–44	45–49	50–54	55–59	60–64	65 and over	All ages	Under 35	35–39	40–44	45–49	50–54	55–59	60–64	65 and over
Under 1,000	$6,690	$8,093	$10,587	$10,463	$8,030	$7,870	$6,260	$5,904	$2,954									
1,000–2,499	8,481	8,700	11,742	11,487	10,709	10,464	8,270	6,077	3,231	$13,043	$7,020	$13,416	$15,807	$13,866	$14,787	$15,635	$11,102	$8,705
2,500–4,999	10,379	10,686	12,200	13,231	13,022	12,184	7,167	6,416	4,690									
5,000–9,999	10,580	9,087	13,112	13,900	13,963	11,402	9,030	8,843	4,124									
10,000–24,999	9,874	9,177	11,003	13,040	11,164	10,014	9,587	7,100	4,687	13,840	9,333	13,332	14,390	17,397	14,643	14,069	10,871	10,516
25,000–49,999	9,414	8,690	11,239	12,403	11,008	10,242	9,280	8,177	3,094	14,867	9,843	14,853	17,402	18,876	17,282	16,320	13,326	6,898
50,000–99,999	9,460	8,929	11,200	12,358	13,850	11,200	9,918	6,960	4,585	15,514	9,579	14,709	17,344	20,170	18,005	16,704	14,668	7,437
100,000–249,999	8,670	9,725	10,719	11,126	10,038	11,128	8,360	6,194	3,479	15,771	10,227	16,148	18,700	18,000	17,413	18,969	14,290	8,436
250,000–499,999	9,537	10,324	11,384	12,838	13,480	9,704	9,812	8,640	3,732	16,608	10,424	14,681	19,090	19,700	20,030	18,030	17,851	10,717
500,000–999,999	8,478	8,050	11,206	12,312	10,219	10,453	7,700	6,064	3,124	15,862	9,204	13,072	16,881	19,747	19,166	18,049	17,895	11,810
1,000,000 and over	7,231	6,049	7,913	8,834	9,003	7,767	6,960	4,618	3,282	13,670	7,460	11,400	14,614	16,203	16,100	16,775	11,432	9,426
United States[3]	8,835	9,054	11,191	11,798	11,106	10,442	8,205	6,337	3,010	15,014	9,203	13,338	18,690	19,126	17,560	17,063	13,624	9,363

[1] Returns were classified by size of place on the basis of preliminary 1950 Census data.
[2] Data for general practitioners in communities under 10,000 population are as follows: all ages, $9,920; under 35 years, $9,298; 35–39, $12,007; 40–44, $12,424; 45–49, $11,644; 50–54, $10,852; 55–59, $7,770; 60–64, $6,524; 65 years and over, $3,404.
[3] Total number reporting in U. S. by age groups: general practice—9,427 (all ages); 1,644; 1,495; 1,360; 992; 747; 805; 530; 1,768 (65 and over); 406 (unknown); fully specialized—9,364 (all ages); 1,064; 1,014; 1,703; 1,320; 976; 758; 499; 600; 371 (unknown).

Source: U. S. Department of Commerce, Office of Business Economics.

and gynecology fourth, and psychiatry fifth. (See table 9 for further detail.)

The distribution of full specialties among independent full specialists is roughly similar to that for all full specialists. For salaried full specialists, on the other hand, the situation is quite different. Internal medicine represents the most numerous specialty among salaried physicians, as among independents. But the second most important group is psychiatry. Public health-preventive medicine ranks third, surgery fourth, and pathology fifth. (See table 9 for further specialties.)

In most fields of specialization, independent practitioners outnumber the salaried by a considerable number, just as they do among general practitioners. However, in public health-preventive medicine, tuberculosis, pathology, industrial practice, neurology, and psychiatry, salaried physicians are far more common than their independent colleagues.

The very highest incomes among independent full specialists are earned in specialties having very few members, although smallness of membership in a given specialty seems to be no assurance of a high income. Thus, we find that some of the lowest average incomes occur in the smallest specialties—such as plastic surgery and allergy. The lowest average incomes on which reliable data are available are pediatrics (mean, $12,016; median, $10,695)—the third largest independent full specialty—and internal medicine (mean, $12,637; median, $10,944)—the largest independent full specialty. On the other hand, anesthesia—a medium-sized specialty—also yielded a low income (mean, $12,783; median, $12,115).[26] (See table 9.)

Among full specialists in independent practice in 1949, the fields in which the largest incomes were made are the following:

Full specialists in independent practice	Median age (years)	Mean net income	Median net income	Percent of all full specialists who are in given field
1. Neurological surgery	42	$28,628	$24,500	0.8
2. Pathology	40	22,284	20,167	.6
3. Gynecology	53	19,283	18,500	.7
4. Orthopedic surgery	48	18,809	15,063	3.4
5. Roentgenology-radiology	45	18,540	16,550	3.7
6. Surgery (general)	45	17,765	15,389	13.9
7. Obstetrics and gynecology	43	17,102	14,288	8.7
8. Neurology and psychiatry	45	16,476	13,375	2.1
9. Urology	45	16,370	13,321	3.3
10. Cardiology	51	15,589	13,375	.9

Among salaried full specialists in 1949, the fields in which the largest incomes were made differ strikingly from those

[26] Most of the independent full specialties for which *Medical Economics* provides data (for 1947) agree quite well with the findings of the present survey (for 1949). The principal exception is orthopedic surgery, for which the published mean is $11,045. See: Richardson, *op. cit.*, October 1948, p. 97. Levan and Leland also give quite different figures for orthopedic surgery in 1928 (1929). See Levan, *op. cit.*, pp. 115 and 116.

Table 9.—Average Net Income of Partly and Fully Specialized Physicians by Class of Worker and Field of Specialization, 1949

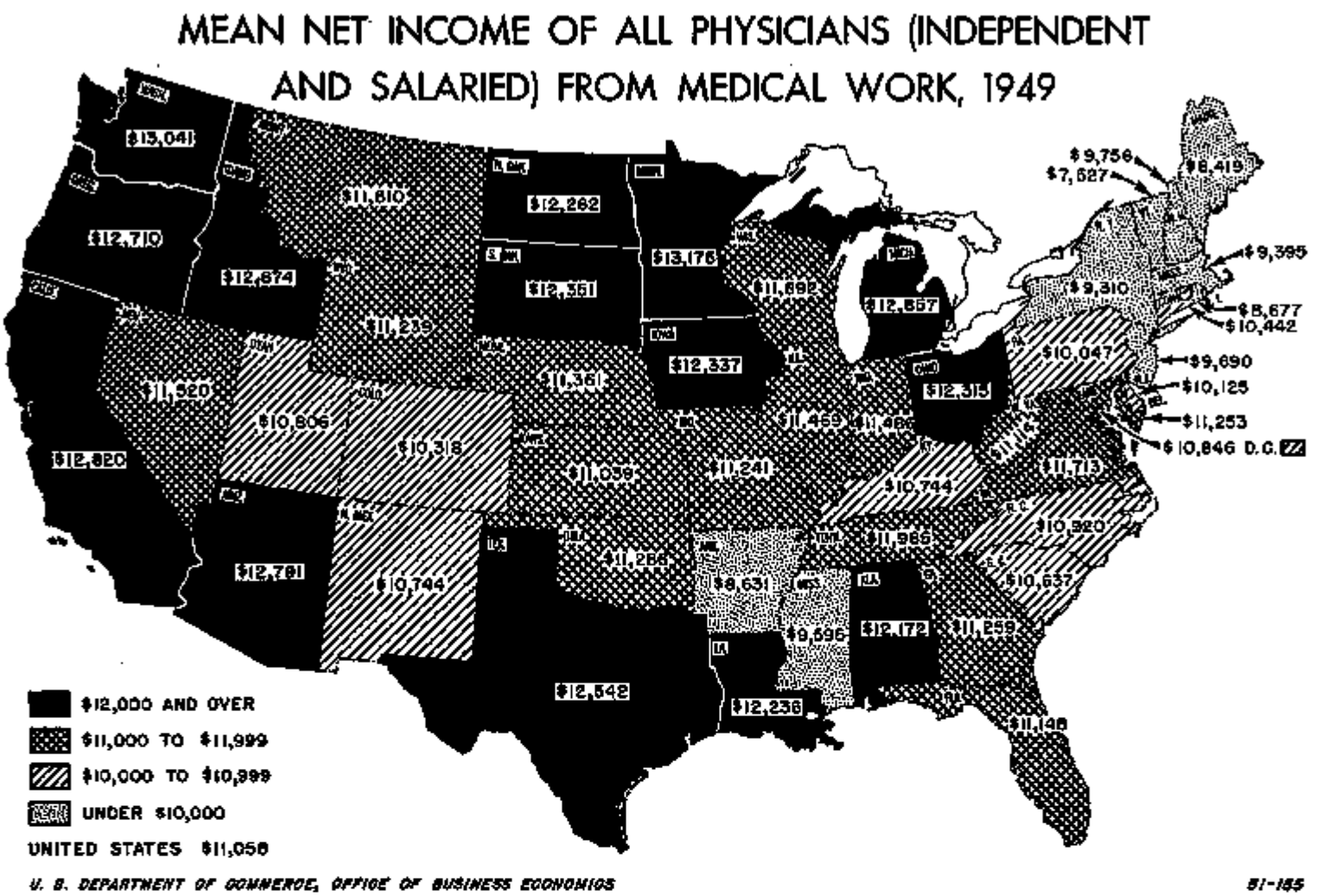
Field of specialization (listed alphabetically)	All physicians		Major independent									Major salaried				
	Partly specialized	Fully specialized	Partly specialized			Fully specialized						Partly specialized [3]	Fully specialized			
	Number	Number	Number	Mean net income	Median net income	Number		Mean net income		Median net income		Median age (years)	Number	Number	Mean net income	Median net income	Median age (years)
	Percent	Percent	Percent			Percent	Rank	Dollars	Rank	Dollars	Rank		Percent	Percent			
Allergy	1.3	0.6	1.3	$9,382	$7,875	0.8	18	$13,510	17	$12,333	16	43	0.8	0.2	(2)	(2)	(2)
Anesthesia	2.5	2.3	2.0	10,762	10,143	2.0	16	12,783	21	12,116	17	41	1.3	2.9	$10,034	$9,250	37
Bacteriology		.1												.2	(2)	(2)	(2)
Cardiology	2.0	.5	2.1	10,320	10,000	.9	17	15,589	10	13,375	9.5	51	1.5	.5	(2)	(2)	(2)
Clinical pathology	.2	.3	.1	(2)	(2)	.2	27	(2)	(2)	(2)	(2)	(2)	.7	.5	(2)	(2)	(2)
Dermatology-syphilology	1.5	2.1	1.5	6,547	6,700	3.5	11	13,214	11	12,125	10	47	1.8	2.1	6,340	6,000	39
Gastroenterology	.9	.8	.9	(2)	(2)	.3	24	(2)	(2)	(2)	(2)	(2)	.5	.4	(2)	(2)	(2)
Gynecology	1.5	.5	1.9	8,737	7,500	.7	21	19,283	3	18,500	3	53	1.2	(2)	(2)	(2)	(2)
Industrial practice	2.4	1.1	1.7	12,282	11,500	.3	25	(2)	(2)	(2)	(2)	(2)	7.0	8.0	10,271	9,115	44
Internal medicine	21.1	16.7	20.3	9,034	8,272	17.0	1	12,637	22	10,944	21	42	25.8	10.1	8,151	7,500	37
Neurological surgery	(2)	.7	(2)	(2)	(2)	.8	10	25,625	1	24,500	1	42		.7	(2)	(2)	(2)
Neurology	.1	.2	.1	(2)	(2)	.1	28.5	(2)	(2)	(2)	(2)	(2)		.6	(2)	(2)	(2)
Neurology and psychiatry	.7	3.3	.5	(2)	(2)	2.1	14	16,476	8	13,375	9.5	45	3.7	6.7	8,403	8,103	44
Obstetrics	3.0	.5	4.2	11,728	11,000	.7	20	15,004	13	14,000	7	43	1.5	.1	(2)	(2)	(2)
Obstetrics and gynecology	7.7	7.3	8.0	12,470	10,870	9.7	4	17,102	7	14,288	8	43	6.4	1.8	7,158	6,603	35
Ophthalmology	1.5	4.7	1.5	6,504	5,125	0.1	0	14,046	14	13,323	11	45	1.2	1.7	7,148	6,688	36
Ophthalmology-otolaryngology	1.3	4.0	2.0	6,201	4,500	0.7	5	13,461	18	11,580	19	52	.8	1.3	10,544	8,500	45
Orthopedic surgery	1.0	3.0	.0	(2)	(2)	3.4	12	18,809	4	15,063	5	43	1.8	2.2	9,680	7,214	37
Otolaryngology	1.2	2.4	1.3	8,035	6,500	1.2	7	13,257	19	11,052	19	40	.7	1.6	8,480	8,213	38
Pathology	.3	2.6	.2	(2)	(2)	.5	22	22,284	2	20,167	2	40	1.2	7.4	11,745	10,857	41
Pediatrics	4.4	8.2	4.3	9,450	7,545	0.8	3	12,510	23	10,695	22	42	4.5	4.4	6,196	5,722	32
Physical medicine	.5	.4	.5	(2)	(2)	.1	28.5	(2)	(2)	(2)	(2)	(2)	.3	.0	8,500	6,500	49
Plastic surgery	(1)	.3	.1	(2)	(2)	.5	23	13,232	20	10,000	23	42		.1	(2)	(2)	(2)
Proctology	1.4	.8	1.4	8,701	6,500	1.1	15	14,680	15	11,500	20	48	1.0	.3	(2)	(2)	(2)
Psychiatry	1.7	6.6	.0	(2)	(2)	3.7	9	14,374	16	12,967	14	43	0.0	13.0	8,137	7,761	43
Public health-preventive medicine	.5	2.5	.1	(2)	(2)	(1)	32	(2)	(2)	(2)	(2)	(2)	3.4	8.8	8,103	7,747	44
Roentgenology-radiology	1.4	4.5	1.5	12,977	10,000	3.7	10	18,540	5	16,550	2	45	1.2	0.8	12,226	10,412	40
Surgery	28.9	12.0	32.3	15,241	13,071	13.9	2	17,765	6	15,389	4	45	14.1	7.8	8,283	7,604	37
Thoracic surgery	(1)	.2	.1	(2)	(2)	.3	26	(2)	(2)	(2)	(2)	(2)		.2	(2)	(2)	(2)
Tuberculosis	.9	1.0	.8	(2)	(2)	.1	30	(2)	(2)	(2)	(2)	(2)	2.7	4.7	7,376	7,207	4
Urology	1.4	3.1	1.3	7,450	4,007	3.8	8	16,370	9	13,321	12	45	2.5	1.7	9,218	8,800	38
Other	.1	.1	.1	(2)	(1)	(2)	31	(2)	(2)	(2)	(2)	(2)	.3	.3	(2)	(2)	(2)
Multiple specialties	0.3	3.0	0.5	13,823	11,767	3.0	13	15,189	12	13,260	13	46	5.5	2.0	10,742	9,188	42
United States [4]	100.0	100.0	100.0	11,758	9,002	100.0	.....	15,044	.....	12,500	.....	44	100.0	100.0	8,584	7,863	40

[1] Less than 0.05 per cent.
[2] Too few cases in sample to yield reliable results.
[3] Mean and median net income columns are not shown for partly specialized salaried physicians because only three specialties had sufficient returns to yield reliable results. These were industrial practice (mean, $9,478; median, $8,399), internal medicine (mean, $7,201; median, $6,714), and surgery (mean, $7,852; median, $6,778). For the country as a whole, partly specialized salaried physicians had a mean of $7,136, and a median of $6,503.
[4] Approximately 5.1 percent of the partly specialized and 2.0 percent of the fully specialized, among independent physicians; and 4.5 percent of the partly specialized and 2.2 percent of the fully specialized, among salaried physicians, failed to report their field of specialization. These cases were excluded from the percentage base, but not from the average incomes shown on the total line.

The number of usable returns in each of the categories is as follows: major independent—partly specialized, 2,970—fully specialized, 9,100; major salaried—partly specialized, 596—fully specialized, 4,001.

Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.



in which independent specialists received their top incomes:

Salaried full specialists	Median age (years)	Mean net income	Median net income	Percent of all full specialists who are in given field
1. Roentgenology-radiology	40	$12,326	$10,412	6.3
2. Pathology	41	11,745	10,957	7.4
3. Multiple specialties	42	10,742	9,188	2.9
4. Ophthalmology-otolaryngology	45	10,644	8,500	1.3
5. Industrial practice	44	10,271	9,115	3.0
6. Anesthesia	37	10,034	9,250	2.9
7. Orthopedic surgery	37	9,580	7,214	2.2
8. Surgery (general)	37	9,283	7,694	7.8
9. Urology	38	9,218	8,800	1.7
10. Physical medicine	49	8,500	8,500	.9

Perhaps the most striking aspect of the average income of independent vs. salaried full specialists is the great differences found between the two groups for the same specialty. Part of this difference is clearly due to the fact that in any given specialty, the independent practitioners tend to be several years older than their salaried colleagues. But, again, as in the case of degree of specialization, the age differentials are seldom large enough to account for the entire income differentials.

In psychiatry, for example, independent and salaried full specialists average 43 years of age, but the former has a mean net income of $14,374, and the latter, $8,137. In neurology and psychiatry the average ages are 45 and 44 for independent and salaried, respectively; the mean net incomes are $16,476 and $8,463, respectively.

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Geographic location

It has sometimes been questioned whether observed regional income differences are not merely reflections of city-size differences among the various regions. That such is apparently not the case, at least for physicians, can be seen from an examination of table 10, covering the year 1949.[27]

For example, in any given city size, instead of finding that average income is practically the same in every region, we find that it shows a wide range of variation. Nor is this variation a haphazard one from one city size to another. The various regions do not have the same rank in each city-size group, it is true, but the uniformity is nevertheless quite striking. Thus, in terms of the mean, the Far West ranks first in 7 of the region's 11 city sizes (as well as first in the Nation). New England, on the other hand, ranks last in 8 of the region's 9 city sizes (as well as last in the Nation). Likewise, Southwest (which ranks second for the country as a whole) is above average in 8 of the region's 10 city sizes, and Middle East (which is sixth in the Nation) is approximately sixth in 9 of the region's 11 city sizes.

There can be little doubt, then, that real regional income differences existed in 1949 among physicians. Secondly, the existing regional income differences were often quite striking. Thirdly, the regions that ranked high with respect

[27] Using ingenious and elaborate statistical techniques on data covering the period 1932-36 Friedman and Kuznets also conclude that "* * * for physicians * * * region, by itself, has a real influence on income level." See: Milton Friedman and Simon Kuznets, *Income from Independent Professional Practice*, National Bureau of Economic Research, New York, 1945, p. 226. Also see: Edward F. Denison, *op. cit.*, Part 6, pp. 17 and 18.

to the income of independent physicians did not necessarily rank high for salaried physicians. A summary of the principal statistics (abstracted from table 12) illustrate the last two points in graphic fashion:

Mean net income and rank order

Region	All physicians		Independent physicians		Salaried physicians		Excess of independent over salaried average income (percent)
Far West	$12,827	1	$14,368	1	$7,807	6	84.0
Southwest	12,228	2	13,243	2	8,604	3	53.9
Central	12,012	3	12,775	3	9,115	1	40.2
Northwest	11,257	4	12,313	4	7,808	5	57.7
Southeast	11,150	5	12,157	5	7,616	7	59.6
Middle East	9,772	6	10,270	6	8,026	4	28.0
New England	9,442	7	9,740	7	8,605	2	13.2
United States	11,058	–	11,858	–	8,272	–	43.4

For example, in 1949 the mean net income of independent physicians in the Far West (the top region), was almost 50 percent higher than that for New England (the lowest region). Among salaried physicians, on the other hand, the regional income differences were much less pronounced. Although Far West boasted the highest mean net income for independent physicians, it had next to the lowest salaried income, the former exceeding the latter by 84 percent.

Table 10.—Mean Net Income of Nonsalaried Physicians by Region and Size of Community, 1949 [1]

Size of community [2] (population)	All regions	Region [3]						
		New England	Middle East	Southeast	Southwest	Central	Northwest	Far West
Under 1,000	$7,020	$6,003	$7,618	$6,891	$4,870	$7,840	$7,410	$8,081
1,000–2,499	8,776	6,049	8,269	7,736	9,024	9,135	10,081	13,770
2,500–4,999	11,207	6,851	10,150	10,385	12,401	11,028	12,028	15,536
5,000–9,999	11,681	9,143	10,048	11,655	12,450	12,331	14,183	14,767
10,000–24,999	12,262	8,055	10,485	12,420	12,934	13,362	12,000	14,045
25,000–49,999	12,203	9,595	11,431	12,130	13,134	14,738	12,011	15,852
50,000–99,999	12,001	9,572	10,421	13,134	17,322	14,952	13,280	15,307
100,000–249,999	13,053	10,573	11,110	14,012	14,270	14,208	13,338	14,050
250,000–499,999	14,308	-------	10,176	16,130	15,745	14,381	12,557	15,433
500,000–999,999	12,877	10,304	13,508	13,003	12,774	13,209	-------	12,728
1,000,000 and over	10,257	-------	9,157	-------	-------	13,003	-------	13,259
United States	11,744	9,002	10,130	11,968	13,179	12,631	12,305	14,225

[1] These figures differ slightly, for the most part, from those of table 12, because one table is in terms of nonsalaried physicians and the other, major independent.
[2] Returns were classified by size of place on the basis of preliminary 1950 Census data.
[3] See table 12 for the States included in each region.
Source: U. S. Department of Commerce, Office of Business Economics.

Minnesota (with $13,175) had the highest *mean* net income of any State, considering all physicians. In terms of the median (perhaps more significant in such a comparison), Michigan (with $10,777) led all the rest. The State of Washington (mean, $13,041; *median*, $10,714) was second in terms of both measures, for all physicians. (See table 12 for further details.)

Considering only independent physicians, Arizona had both the largest mean and median net incomes ($15,599 and $13,125, respectively); it also had the largest average *gross* income (table 12). Washington State had the second largest ($14,480) mean net income, and Wyoming (with $13,000) had the second largest median net income. Such important States as New York, New Jersey, Pennsylvania, and Massachusetts, all having per capita incomes well above the average for the country, had average independent physicians' incomes markedly below those for the country as a whole.

For salaried physicians alone, Minnesota ranked first, both in terms of mean and median net incomes ($11,632 and $8,929, respectively). North Dakota (with $10,448) had the second highest mean salary, and Michigan (with $8,672), the second highest median. New York, New Jersey, Pennsylvania, and Massachusetts all made better showings for salaried than for independent physicians, but for the most part hovered slightly below the national average.

Readers who see table 10, 11, or 12 for the first time are perhaps most surprised to find that independent physicians in the New England and Middle East States not only have the lowest average incomes in the country, but are substantially lower than Southeast—not to mention Northwest and Central.

The superficial justification for this "intuitive" reaction becomes clear if we make a simple comparison of the rank orders of the mean net income from medical work and the per capita income of the general population. (See table 11.)

Table 11.—Rank Order of Per Capita Income of General Population and Mean Net Income of Physicians by Region, 1941 and 1949

Region [1]	1941		1949	
	Per capita income of general population [2]	Mean net income of nonsalaried physicians [3]	Per capita income of general population [4]	Mean net income of nonsalaried physicians [5]
New England	2-3	6	4	7
Middle East	2-3	3	2	6
Southeast	7	7	7	5
Southwest	6	2	6	2
Central	4	5	3	3
Northwest	5	4	5	4
Far West	1	1	1	1

[1] See table 12 for the States included in each region.
[2] For source, see table 12.
[3] Davidson and Slater, *op. cit.*, table 5, p. 18. The rank for Southwest was estimated.
[4] For source, see table 13.
[5] Source: table 10. Note that the ranks for major independent physicians are the same as for nonsalaried.
Source: U. S. Department of Commerce, Office of Business Economics.

When this is done, we see that, in 1949, although New England ranked fourth in per capita income, it ranked seventh in medical income. Likewise, Middle East, though ranking second in per capita income is next to the bottom as regards medical income. On the other hand, Southwest, which is next to last on per capita income, has the second highest medical income. And Southeast, at the bottom of the per capita pyramid in seventh place (well below sixth place Southwest), is a strong fifth on medical income. Only Far West, Central, and Northwest show a close correspondence between per capita and medical income ranks. (In 1941 the situation was quite similar.)

Apparently, then, we "intuitively" expect the high income regions to yield the highest average physicians' incomes—and likewise for States. But they don't. Instead, we find that some States which have high per capita incomes also have high physicians' incomes (e. g., California, Nevada, Arizona); while others have high per capita incomes but low physicians' incomes—or vice versa (e. g., District of Columbia, New York, Louisiana, Alabama); and some are low on both per capita and physicians' incomes (e. g., Arkansas, Maine, Mississippi, and South Carolina).[20] (See table 12.)

When using the State as an analytical unit for studying the factors affecting physicians' incomes, it is important to keep in mind that the State is a political entity, but seldom an entirely satisfactory analytical one. Heterogeneity rather than homogeneity is the quality that best characterizes most States. When we assign a mean net physicians' income, or a general population per capita income, or a physician-poulation ratio, or a per capita personal consumption expenditure to a given State, we are masking real—and often very large—differences that exist between the rural communities, middle-sized cities, and large metropolises of the State. Whenever we can refine our analyses by using size of community and region simultaneously or even size of community alone, we prefer these analytical units to States—even though the per capita income or physician-population estimates be cruder than those available by States.

[20] The lack of correlation between per capita and independent physicians' incomes is confirmed by a rank order correlation of +0.15.

A better understanding of the relationship between the size of physicians' incomes and the locational factors that influence them would probably be obtained by studying size of community and specific city differences (within regions, if possible), rather than State differences—and this is done in later sections of this article.

As has already been noted, neither physician-population ratios nor per capita income of the general population should properly be analyzed in terms of such a heterogeneous unit as a State. Nevertheless, it is indeed significant that even in terms of such a crude diagnostic unit, the correlation between these two indexes is so high. Clearly, the States with the

Table 12.—Average Income of Physicians by Major Source of Medical Income and by Region and State, 1949

Region and State[1]	Average gross income of nonsalaried physicians: Mean (Dollars)	Average net income of all physicians in civilian practice: Mean (Dollars)	Average net income of all physicians in civilian practice: 1 S. E.[2]	Average net income of all physicians in civilian practice: Median (Dollars)	Independent practice: Mean (Dollars)	Independent practice: Median (Dollars)	Salaried practice: Mean (Dollars)	Salaried practice: Median (Dollars)	Civilian population[3] (Number, thousands)	Per capita personal consumption expenditures for physicians' services[4]: Dollars	Per capita personal consumption expenditures for physicians' services[4]: Rank	Per capita income of general population[5]: Dollars	Per capita income of general population[5]: Rank	Percent of income spent by individuals for physicians' services: Percent	Percent of income spent by individuals for physicians' services: Rank	Non-Federal physicians per 100,000 civilian population (estimate)[6]: Number	Percentage distribution of[7]— Civilian population	Percentage distribution of[7]— All physicians	Physicians with major source of medical income from— Independent practice	Physicians with major source of medical income from— Salaried practice
New England	15,373	9,442	$141	7,861	9,740	8,661	8,485	7,557	9,313	13.82	6	1,385	4	0.99	7	161	6.31	7.71	7.3	8.1
Connecticut	17,390	10,442	326	8,460	11,130	8,068	8,459	8,042	2,004	14.74	23	1,501	7	.90	44	153	1.30	1.59	1.6	2.0
Maine	13,813	8,410	369	7,738	8,424	7,821	8,490	7,671	901	10.40	44	1,097	35	.97	42	90	.61	.55	.6	.5
Massachusetts	16,041	9,305	109	7,687	9,665	7,637	8,713	7,613	4,740	14.80	20	1,417	14	1.04	30	170	3.22	4.33	4.6	5.3
New Hampshire	15,615	9,760	547	8,402	9,580	8,474	10,186	8,250	510	12.54	34	1,106	31	1.05	37	120	.35	.42	.4	.5
Rhode Island	14,865	8,077	424	7,303	9,262	7,889	6,750	6,367	777	12.08	36	1,403	16	.86	47	118	.53	.60	.6	.6
Vermont	12,713	7,827	500	6,633	7,601	6,845	6,750	6,500	366	12.66	33	1,076	34	1.17	25	140	.25	.27	.3	.2
Middle East	18,737	9,772	79	8,025	10,270	8,253	8,020	7,562	30,221	17.11	2	1,465	1	1.05	5	168	23.69	30.04	31.4	30.7
Delaware	17,202	10,126	766	8,714	11,201	10,000	7,050	7,671	318	13.07	29	1,675	4	.77	48	120	.22	.22	.2	.3
Dist. of Columbia	21,325	10,840	323	9,480	12,869	11,224	8,502	8,500	809	26.00	1	1,920	1	1.43	3	257	.56	1.23	.8	2.5
Maryland	22,488	11,263	336	8,680	12,604	10,495	7,712	7,643	2,305	17.74	8	1,404	17	1.27	18	180	1.30	1.75	1.0	2.3
New Jersey	18,585	9,680	104	8,164	9,095	8,431	8,078	7,225	4,740	16.27	14	1,640	8	1.05	36	128	3.21	3.86	4.2	3.7
New York	15,798	9,310	113	7,610	9,726	7,704	7,700	7,461	14,717	19.53	4	1,758	3	1.11	32	166	9.98	16.41	16.0	14.9
Pennsylvania	16,800	10,047	172	8,106	10,466	8,336	8,301	7,311	10,395	14.20	24	1,410	15	1.00	41	128	7.05	7.42	7.6	6.7
West Virginia	20,769	11,114	418	9,474	12,110	10,357	8,180	7,778	1,967	12.48	33	1,108	41	1.25	30	84	1.31	1.00	1.0	1.2
Southeast	20,165	11,250	125	8,786	12,167	9,855	7,810	7,333	30,026	11.59	7	882	7	1.31	1	83	20.76	14.78	14.8	14.0
Alabama	23,889	12,173	481	9,800	13,469	11,609	7,800	7,367	2,100	11.11	42	773	48	1.44	2	68	2.03	1.22	1.2	1.3
Arkansas	17,704	8,431	472	7,184	8,806	7,016	7,707	7,375	1,825	10.08	47	778	47	1.30	14	82	1.24	.87	.9	.9
Florida	20,769	11,146	305	8,800	12,002	9,816	7,187	7,275	2,634	15.46	17	1,102	34	1.40	6	91	1.70	1.67	1.7	1.2
Georgia	19,455	11,250	394	8,803	12,231	9,760	7,493	7,467	3,316	11.62	41	870	43	1.32	12	84	2.25	1.60	1.6	1.4
Kentucky	18,665	10,744	391	8,674	11,782	9,725	6,354	6,600	2,832	11.80	40	805	44	1.37	9	84	1.93	1.44	1.5	1.2
Louisiana	23,460	12,230	400	9,480	13,060	11,657	7,921	7,357	2,621	11.70	38	1,002	40	1.20	23	104	1.78	1.34	1.2	1.7
Mississippi	17,337	9,505	483	7,680	10,111	7,731	7,881	7,469	2,017	8.95	49	634	49	1.41	4	64	1.40	.80	.9	.9
North Carolina	19,410	10,020	328	8,628	11,705	9,609	7,880	7,438	3,869	10.33	45	834	46	1.21	22	80	2.04	1.70	1.8	1.7
South Carolina	18,369	10,037	480	8,405	11,011	8,833	6,055	6,850	1,981	10.31	46	787	44	1.31	13	69	1.34	.86	1.0	.5
Tennessee	23,102	11,065	440	9,297	13,530	10,813	7,881	7,737	3,286	12.00	37	873	42	1.36	7	90	2.31	1.50	1.5	1.9
Virginia	19,992	11,719	356	9,180	12,041	10,633	7,858	7,500	3,207	12.81	30	1,030	38	1.28	21	91	2.17	1.73	1.7	1.8
Southwest	23,372	12,329	206	10,127	13,243	11,402	8,604	7,645	11,005	15.29	4	1,188	6	1.31	2	94	7.46	6.28	6.0	6.2
Arizona	27,085	12,791	742	10,333	15,609	13,125	9,765	6,950	719	17.16	5	1,105	33	1.54	1	97	.49	.50	.4	.7
New Mexico	22,059	10,744	764	8,917	11,792	10,250	9,008	8,375	621	9.87	48	1,063	30	.98	43	73	.42	.30	.2	.5
Oklahoma	20,230	11,284	442	9,680	11,772	10,071	9,408	7,444	2,111	14.94	19	1,008	37	1.40	6	94	1.43	1.24	1.3	1.1
Texas	23,852	12,643	264	10,261	13,646	11,646	8,040	7,620	7,554	16.68	10	1,205	20	1.20	15	95	5.12	4.24	4.1	3.8
Central	20,724	12,012	99	9,929	12,775	10,749	8,116	7,850	39,431	15.46	3	1,414	3	1.09	6	118	26.72	34.00	35.3	31.3
Illinois	20,105	11,649	201	9,130	12,284	10,192	8,760	7,606	8,685	17.84	7	1,618	6	1.10	33	140	5.82	6.44	6.4	6.7
Indiana	19,781	11,486	389	9,071	11,908	10,333	9,270	7,000	3,803	14.66	23	1,200	23	1.13	29	103	3.04	3.31	2.6	1.7
Iowa	21,385	12,337	434	9,785	12,901	10,700	7,034	7,050	2,660	17.20	10	1,202	22	1.34	11	106	1.73	1.69	1.8	.9
Michigan	22,100	12,857	277	10,777	13,260	12,244	9,914	8,072	6,263	12.81	31	1,443	12	.89	46	106	4.25	3.93	3.2	3.9
Minnesota	23,692	13,176	377	10,651	13,963	11,700	11,032	8,020	2,916	13.17	27	1,227	26	1.07	34	132	1.98	1.70	1.6	2.6
Missouri	19,761	11,241	307	8,930	11,923	9,881	7,806	7,115	3,905	16.11	18	1,266	24	1.17	24	120	3.06	2.44	2.0	3.8
Ohio	20,700	12,315	213	10,293	13,076	10,994	8,333	7,900	7,980	16.49	13	1,436	13	1.15	37	116	5.41	5.05	5.5	5.6
Wisconsin	21,599	11,802	344	9,727	12,928	10,804	8,871	7,854	3,334	13.83	25	1,329	20	1.04	40	104	2.25	2.03	2.0	2.2
Northwest	21,529	11,257	208	9,395	12,213	10,432	7,808	7,263	7,622	14.77	6	1,273	5	1.16	4	107	5.27	4.96	4.8	4.1
Colorado	19,020	10,316	362	8,672	11,115	10,000	7,084	7,278	1,232	17.05	9	1,380	19	1.26	17	158	.84	1.04	1.0	1.1
Idaho	23,449	12,874	813	10,376	13,867	12,600	6,500	7,000	570	15.09	15	1,221	29	1.28	10	77	.39	.30	.3	.2
Kansas	20,427	11,030	426	8,827	12,326	10,750	7,812	7,352	1,857	13.63	26	1,310	38	1.12	30	103	1.25	1.11	1.0	1.3
Montana	23,237	11,810	580	10,001	13,184	11,000	8,710	8,000	556	14.58	21	1,300	18	1.06	38	94	.38	.35	.3	.5
Nebraska	19,427	11,381	512	9,087	12,392	10,843	6,250	6,625	1,281	17.83	8	1,284	21	1.38	8	114	.87	.90	1.0	.7
North Dakota	20,027	12,243	587	9,500	13,000	9,875	10,448	9,000	583	10.62	43	1,202	30	.86	40	75	.40	.28	.3	.4
South Dakota	22,342	12,361	810	9,723	14,049	11,607	7,400	7,100	615	13.12	28	1,174	32	1.12	31	78	.42	.32	.3	.4
Utah	18,744	10,806	909	9,071	11,417	9,671	8,400	7,600	675	12.76	32	1,213	27	1.06	36	110	.40	.40	.4	.4
Wyoming	22,727	11,230	1,021	9,334	13,207	13,000	7,436	7,333	271	11.91	39	1,481	9	.80	48	88	.18	.15	.1	.2
Far West	25,519	12,827	174	10,326	14,368	12,678	7,987	7,409	14,301	21.41	1	1,650	1	1.30	3	132	9.79	10.56	10.4	11.1
California	25,761	12,820	200	10,129	14,369	12,082	7,914	7,422	10,339	22.64	2	1,688	5	1.36	10	142	7.01	7.09	7.8	8.5
Nevada	27,400	11,520	1,225	8,363	14,144	12,600	6,318	6,126	157	21.03	3	1,731	3	1.25	20	110	.11	.12	.1	.2
Oregon	24,282	12,710	516	10,376	14,340	12,375	7,196	7,147	1,494	16.69	12	1,446	11	1.16	28	109	1.01	.92	.9	.9
Washington	24,846	13,041	424	10,714	14,690	12,700	7,864	7,076	2,314	17.00	11	1,409	10	1.10	26	104	1.57	1.33	1.6	1.5
United States	19,710	11,058	62	8,835	11,858	9,808	8,272	7,555	147,589	15.43	-------	1,339	-------	1.19	-------	131	100.00	100.00	100.0	100.0

1 Where items are ranked, the regions are ranked separately from the States.

2 The amount shown in this column is called the "standard error." It represents the extent to which the reported mean may be expected to vary as a result of the fluctuations due to sampling alone. The chances are 68 out of 100 that the true mean lies within the range of the sample mean plus or minus 1 S. E., assuming the sample is not biased. The chances are 95 out of 100 that the true mean lies within the range of the sample mean plus or minus 2 S. E. Generally speaking, the larger the State the more reliable are the published averages. Text footnote 33 (on cities) may be helpful in pointing out cautions to keep in mind when comparing the averages for different States.

There were 23,213 usable "major independent" returns and 5,605 usable "major salaried" returns. The following States had fewer than 100 sample cases for "all physicians": Vermont (82); Delaware (68); New Mexico (89); Idaho (90); North Dakota (83); South Dakota (97); Wyoming (40); and Nevada (37).

3 Bureau of the Census, *Provisional Intercensal Estimates of Regions, Divisions, and States: July 1, 1940 to 1949*, Series P-25, No. 47, Washington, D. C., March 9, 1951, p. 4.

4 The personal consumption expenditure figure implicit here is derived directly from the survey findings, and was not adjusted to agree with the official Department of Commerce figure for 1949, not available at the time these estimates were made. However, the difference will probably be minor. See footnote 30 in the text for the items excluded from personal consumption expenditures for physicians' services.

5 Charles F. Schwartz and R. E. Graham, Jr., "State Income Payments in 1949", SURVEY OF CURRENT BUSINESS, August 1950, table 8, p. 20.

6 The number of non-Federal physicians was calculated from data in the *1950 American Medical Directory*, table 3, p. 11, cols. 4 plus 5 plus 6 plus 7 plus 9. Differs only slightly from similar Dickinson-Bradley-Cargill figures. *Op. cit.*, table 1, col. 10, p. 7.

7 Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

highest per capita incomes were, on the whole, those which had the largest supply of physicians per 100,000 population.[29] (See table 12.) That is, physicians tend to locate in places where general incomes are high—for here, also, are the hospitals, medical schools, and other facilities and specialized personnel.

Another highly significant relationship is that between per capita personal consumption expenditures for physicians' services and per capita income by States. Again, this is a relationship that should be studied in the framework of more homogeneous spatial units, like communities by size and region or medical service areas. It is all the more remarkable, then, when crude State comparison shows a high degree of correlation between these two factors. In general, the higher a State's per capita income, the higher we may expect to find its per capita consumer expenditures for physicians' services.[30] (See table 12.)

Although little or no correlation was found between a State's per capita income and the average net income earned by its physicians (see above), it is understandable that the amount of per capita consumer expenditures for physicians' services might be more closely related to physicians' incomes. And, according to our data, it is—although the relationship is fairly low.[31] However, we must not rule out the probability that a similar analysis in terms of more homogeneous units like size of community and region would show a higher degree of correlation.

Finally, it is of considerable interest to note that there seems to be practically no relationship between per capita personal consumption expenditures for physicians' services and the percentage of income spent for physicians' services.[32] Some might have supposed that those States whose residents spent the most per capita for physicians' services would also tend to spend the largest proportion of their total incomes for physicians' services.

Some may find it surprising that New York State, with the fourth highest per capita consumer expenditure for physicians' services, could be thirty-second on percent of income spent by individuals for physicians' services. And that Illinois could be seventh on per capita, but thirty-third on percent. It may be equally surprising that Mississippi, which is lowest (forty-ninth) on per capita consumer expenditures should rank fourth on percent of income spent for physicians' services. Or that Arkansas should be forty-seventh on per capita, but fourteenth on percent. (See table 12.)

[29] The high correlation between physicians per 100,000 population and per capita income is confirmed by a rank order correlation of +0.74.

[30] The high correlation between per capita consumer expenditures for physicians' services and per capita income is confirmed by a rank order correlation of +0.71.

Personal consumption expenditures for physicians' services were calculated by subtracting from the physician's total gross receipts (from independent practice) the amounts he reported he received from Government and welfare agencies, workmen's compensation cases, life insurance examinations, and other business organizations (item 10 minus item 10 on the white questionnaire—see Technical Notes). In 1949 about 90.3 percent of physicians' total gross receipts from independent practice were received from individual consumers. In 1941 the figure was little different: 91.2.

[31] The fairly low rank order correlation between per capita consumer expenditures and the mean net income of independent physicians, by States, is confirmed by a rank order correlation of +0.38.

[32] The almost complete absence of relationship between per capita personal consumption expenditures and percent of income spent for physicians' services, by States, is confirmed by a rank order correlation of +0.29.

Table 13.—Average Net Income and Age of Physicians by Class of Worker for the 32 Largest Cities in the United States, 1949

Specific cities [1] (listed alphabetically)		Total population [2]	Median net income of all families and unrelated individuals in 1949 [3]	All physicians					Major independent					Major salaried			
City	State	Number (thousands)		Percent	Mean net income	Sampling fluctuation of mean: 1 S. E. [4]	Median net income	Median age (years)	Percent	Mean net income	Median net income	Median age (years)	Percent of physicians 65 years of age and over	Percent	Mean net income	Median net income	Median age (years)
Atlanta	Georgia	327	$2,192	0.5	$13,220	$833	$10,450	46	0.5	$16,009	$13,125	47	11.9	0.7	$7,201	$7,556	41
Baltimore	Maryland	949	2,706	1.0	12,568	506	10,053	43	1.0	14,038	11,867	44	9.9	1.0	7,300	7,316	38
Boston	Massachusetts	791	2,524	1.7	10,574	373	8,286	45	1.4	11,219	9,450	46	14.1	2.9	6,513	7,265	40
Buffalo	New York	577	3,097	.8	12,420	749	9,602	48	.7	13,162	10,100	47	14.7	.6	8,758	8,500	38
Chicago	Illinois	3,690	3,381	3.4	10,903	286	8,910	49	3.3	11,797	9,958	48	11.9	4.1	6,307	7,324	49
Cincinnati	Ohio	501	2,853	.6	11,422	541	9,444	46	.6	12,764	10,558	46	11.1	.5	7,406	7,750	44
Cleveland	Ohio	906	3,122	1.2	11,801	409	8,778	46	1.1	12,688	10,153	47	9.3	1.3	9,258	8,389	41
Columbus	Ohio	372	(5)	.4	13,194	741	10,571	42	.6	14,164	11,600	42	8.6	(6)	(6)	(5)	(6)
Dallas	Texas	433	2,907	.5	12,653	818	11,500	44	.5	16,244	13,280	45	10.3	.5	8,037	7,428	39
Denver	Colorado	413	2,819	.5	10,042	641	8,909	42	.5	11,767	10,125	42	10.6	.3	7,744	6,829	41
Detroit	Michigan	1,839	3,499	1.8	13,184	486	10,800	45	1.8	14,068	11,675	47	11.6	1.7	10,894	8,904	41
Houston	Texas	594	(5)	.5	12,184	928	10,500	42	.6	12,717	10,092	43	9.1	.5	10,098	9,750	38
Indianapolis	Indiana	425	3,028	.5	11,745	833	10,136	45	.6	12,682	11,623	47	15.2	.3	9,395	7,750	43
Kansas City	Missouri	453	2,660	.4	13,712	823	11,500	50	.5	14,456	12,389	50	15.3	(6)	(6)	(6)	(6)
Los Angeles	California	1,958	2,841	2.2	12,097	470	8,674	44	2.0	13,773	10,265	45	12.5	2.3	7,902	7,827	41
Louisville	Kentucky	397	2,775	.4	13,395	806	11,309	46	.4	15,291	12,853	48	17.9	.5	7,344	7,900	43
Memphis	Tennessee	394	2,251	.3	14,917	1,854	10,250	42	.3	18,756	15,250	44	10.8	.5	7,255	7,417	40
Milwaukee	Wisconsin	632	2,750	.5	12,540	682	9,727	45	.6	14,174	12,825	48	12.5	.3	8,077	7,250	40
Minneapolis	Minnesota	517	2,939	.5	13,878	906	9,833	45	.4	16,010	12,125	49	16.8	.5	9,107	7,500	34
Newark	New Jersey	438	2,551	.6	9,494	478	7,057	45	.7	9,974	7,750	45	12.7	.6	7,205	7,000	42
New Orleans	Louisiana	597	2,309	.6	11,626	668	9,043	41	.6	13,407	10,250	43	11.3	.9	8,200	8,111	38
New York	New York	7,835	3,189	9.8	8,861	146	7,020	40	10.0	9,237	7,107	43	20.5	9.2	7,265	6,224	42
Oakland	California	381	2,921	.5	13,857	833	10,750	43	.4	16,141	13,500	45	16.2	.6	7,154	7,143	37
Philadelphia	Pennsylvania	2,065	(5)	2.5	9,833	309	7,461	45	2.5	10,540	7,725	45	15.8	2.6	7,409	6,542	41
Pittsburgh	Pennsylvania	674	2,599	.8	12,253	574	8,888	44	.8	13,522	9,875	45	15.1	1.0	8,858	8,000	40
Portland	Oregon	371	2,905	.5	13,710	901	11,350	42	.5	15,317	13,871	43	8.4	.5	7,900	7,400	38
Rochester	New York	331	2,972	.5	10,699	592	9,500	46	.5	21,000	9,500	47	13.6	.5	9,500	9,378	44
St. Louis	Missouri	853	(5)	1.0	12,140	518	9,500	47	1.1	13,103	10,515	49	17.6	.9	8,025	7,108	49
San Antonio	Texas	407	2,303	.3	13,427	1,841	9,714	45	.3	14,000	10,975	44	8.2	(6)	(6)	(6)	(6)
San Francisco	California	701	3,016	1.0	12,097	556	10,100	44	1.0	13,917	11,444	45	13.7	1.2	9,393	7,758	42
Seattle	Washington	462	2,997	.5	13,200	720	10,667	42	.5	15,410	14,258	43	8.5	.7	7,583	7,571	37
Washington	D. C.	796	2,979	1.2	10,846	331	9,486	44	.9	12,800	11,256	44	11.1	2.8	8,502	8,500	44
United States [7]		147,500	2,739	100.0	11,058		8,835	44	100.0	11,858	9,068	45	13.2	100.0	8,272	7,455	41

[1] Includes all cities having approximately 325,000 or more inhabitants in the 1950 Census. See p. 5 of source cited in footnote 2 of this table.

[2] Bureau of the Census, *Population of Cities of 25,000 or More: April 1, 1950*, Series PC-3, No. 6, Washington, D. C., Dec. 6, 1950. Includes members of the armed forces.

[3] Based on preliminary 1950 Census data made available, through the courtesy of the Bureau of the Census, prior to publication.

[4] The amount shown in this column is called the "standard error." It represents the extent to which the reported mean may be expected to vary as a result of the fluctuations due to sampling alone. The chances are 68 out of 100 that the true mean lies within the range of the sample mean plus or minus 1 S. E., assuming the sample is not biased. The chances are 95 out of 100 that the true mean lies within the range of the sample mean plus or minus 2 S.E. Generally speaking, the larger the city the more reliable are the published averages. See text footnote 33 for cautions to keep in mind when comparing the averages for different cities.

[5] Data not available.

[6] Too few cases to yield reliable results.

[7] Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

Apparently, physicians' services partake of many of the characteristics of a necessity. Accordingly, individuals in the wealthier States tend to spend a smaller proportion of their incomes for physicians' services, although a larger actual amount. On the other hand, individuals in the lower income States tend to spend a higher proportion of their incomes for physicians' services, but spend less in actual dollars.

The implications of these findings deserve to be much more intensively studied, particularly by community size and region, if not by city and region or by medical service area and region. Of course, if data are available, the services studied should be broadened from simply "physicians' services" (the limited concept utilized in this article) to "medical services", or even to "medical care"—the latter including dental services, other curative services, etc. Interestingly enough, the above phenomenon is apparently not peculiar to medicine, but also occurs, at least, in the field of education.

Specific city

Because of the unusually large size of sample and the unprecedented rate of return, it is possible—for the first time—to present average income data, covering the year 1949, for the 32 largest cities in the United States—with populations of over 325,000. (See table 13.)[33]

It might be expected that physicians in the largest cities make the most money, but such is not the case. On the average, independent physicians in cities of 300,000–399,999 population have the largest mean net income ($15,111). As city size increases, average income declines until in cities of over a million population the mean for independent physicians is only $10,661. This point and some of its implications are more fully developed later in terms of the income differences for *all* sizes of community.

The inverse relationship between city size and average net income for independent physicians in cities of 300,000 inhabitants or more is, however, a far from perfect one. For example, the 300,000–399,999 population category includes cities ranging from Rochester, N. Y., with a mean net income of $11,030, all the way up to Memphis, with a mean of $18,758. The million or more population category includes cities ranging from New York City, with a mean of $9,237, to Detroit, with a mean of $14,058. The average net income of salaried physicians—unlike that for independent physicians—seems to follow no clear pattern in the 32 large cities.

Not a single city having 650,000 or more population falls among the 10 cities having the highest average net income for independent physicians. All three of the top-income cities had less than 400,000 population. In 1949, the average *independent* physician in Memphis, Tenn., earned twice as much as his New York City counterpart. But on the other hand, the average *salaried* physician in Memphis earned no more than his New York City colleague. Independent physicians in New York City reported the smallest average net incomes, both in terms of the mean and median ($9,237 and $7,107, respectively), of any of the 32 largest cities—and appreciably below the average for the country as a whole. Newark (with a mean of $9,974) was next to lowest; Philadelphia was slightly higher with a mean net of $10,540; Rochester, N. Y., next higher, with a mean of $11,030; and Boston fifth from the bottom, with a mean of $11,219.

If we compare physicians' incomes in New York City for 1941 and 1949, we must conclude that, relative to the Nation as a whole, the situation has become considerably worse even in the short span of 8 years. In 1941, nonsalaried physicians in New York City reported a mean net income which was 11 percent below the average for the Nation. In 1949 it was 25 percent below the average for the country.[34]

Size of community

Lawyers' incomes were found to be lowest in the smallest communities and highest in the largest. Dentists' incomes, although also lowest in the smallest places, reached a peak in cities of 50,000–99,999, and then declined.[35] Generally speaking, physicians—who, like dentists, serve individuals primarily (whereas lawyers serve both business firms and individuals)—follow a pattern like dentists.

Table 14.—Average Net Income and Age of Physicians by Class of Worker and Size of Community, 1949

Size of community [1] (population)	Major independent				Major salaried			
	Percent of physicians	Mean net income	Median net income	Median age (years)	Percent of physicians	Mean net income	Median net income	Median age (years)
Under 1,000	4.0	$7,199	$3,000	50	4.8	$7,049	$7,000	45
1,000–2,499	6.0	8,732	7,007	45	2.7	7,269	6,800	40
2,500–4,999	4.5	17,228	10,110	44	3.3	7,201	7,445	44
5,000–9,999	6.7	12,624	10,149	44	5.5	8,486	7,462	42
10,000–24,999	10.1	12,134	10,621	44	8.4	8,463	7,620	42
25,000–49,999	8.8	12,812	11,037	44	10.6	9,147	7,932	42
50,000–99,999	8.9	13,180	10,921	45	8.9	8,578	7,878	42
100,000–249,999	11.2	13,110	10,600	45	11.0	8,305	7,020	42
250,000–499,999	8.2	14,270	11,970	45	8.8	7,803	7,358	39
500,000–999,999	10.5	13,101	10,546	46	14.8	8,738	7,925	40
1,000,000 and over	10.1	10,661	7,985	47	20.6	7,946	7,199	42
United States [2]	100.0	13,868	9,668	45	100.0	8,272	7,356	42

[1] Returns were classified by size of place on the basis of preliminary 1950 Census data.
[2] Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

Considering all physicians, in 1949 the smallest mean net income ($7,090) was reported in places having fewer than 1,000 inhabitants. (See table 15.) As city size increased, average income increased fairly rapidly (with only slight irregularity) until a peak of $12,766 was reached in cities of 250,000–499,999.[36] As a city size increased further, average income declined to $10,021 in places of a million or more. It is significant that physicians in cities of over a million had a lower mean net income than physicians in any other size of place except those in places with fewer than 2,500 inhabitants.

[33] As in the case of the State data, the figures for the separate cities are to be used with considerable caution and restraint for comparative purposes. Generally speaking, the larger the city the more reliable are the published averages and percentages. There is no reason to believe that the results for any city are biased, but the results for all cities—even the largest—will reflect fluctuations due to sampling, and, in general, the smaller the city the larger will be the sampling fluctuations. Thus, the mean net income for all physicians in New York City was reported as $8,261. The chances are 95 out of 100 that the true mean lies between $8,000 and $8,100. For Chicago the reported mean was $10,903. The chances are 95 out of 100 that the true mean lies between $10,200 and $11,600. The difference between the means for these two cities is clearly significant in a statistical sense. Likewise, the average income shown for New York—having a small sampling fluctuation—is significantly lower than that of Atlanta, Dallas, Denver, Houston, Indianapolis, Louisville, Memphis, Oakland, Rochester (N. Y.), or San Antonio, although these are all smaller cities with large sampling fluctuations. On the other hand, it is not possible to say that Memphis has a significantly higher income than Atlanta, Dallas, Houston, Indianapolis, Louisville, Oakland, or San Antonio because all these cities have large sampling fluctuations.

[34] The 1941 figures are from the Denison-Slater article. *Op. cit.*, table 4, p. 18. At that time, the New York City figures were: mean, $4,482; median, $3,170. The U. S. figures were: mean, $5,047; median, $3,756. For 1949, the New York City figures were: mean, $8,802; median, $6,923. (The figures are for nonsalaried—not major independent—physicians.)
It is also of interest to record some specific figures for 1949, by degree of specialization, for independent physicians in the two major cities of the Nation. These could not be conveniently introduced elsewhere:

City	Mean net income			Median net income		
	General practice	Partly specialized	Fully specialized	General practice	Partly specialized	Fully specialized
New York City	$6,462	$7,223	$11,923	$5,578	$5,701	$9,240
Chicago	7,532	10,014	15,305	6,908	8,500	12,270
United States	8,835	11,768	15,014	7,428	9,902	12,000

The median ages by degree of specialization for New York City's independent physicians, in 1949, were 47 (GP), 48 (PS), and 48 (FS). For Chicago the median ages were 49 (GP), 52 (PS), and 40 (FS).

[35] Weinfeld, *op cit.*, pp. 22 (lawyer's article) and 14 (dentist's article).
[36] In the section on specific cities, the peak was more sharply delimited to 200,000–250,000.

Table 15.—Percentage Distributions of Population and Physicians, and Average Net Income and Age of Physicians by Size of Community, 1949

Size of community [1] (population)	Percentage distribution of— General population [3]	Percentage distribution of— All physicians [4]	All physicians [2]: Relative excess or deficit of physicians [5] (percent)	All physicians [2]: Physicians per 100,000 population [6] (estimate)	All physicians [2]: Median age (years)	All physicians [2]: Mean net income	All physicians [2]: Median net income	Median income of all earners in the general population, 1949 [7]
Under 1,000	38.9	5.0	−73.6	29	49	$7,090	$6,177	$1,452
1,000–2,499		6.8			44	8,579	7,447	
2,500–4,999	4.7	6.1	8.6	120	44	10,593	9,050	1,913
5,000–9,999	5.9	6.4	8.6	120	44	11,028	9,354	
10,000–24,999	8.6	9.7	12.8	124	44	11,425	9,807	1,984
25,000–49,999	4.2	9.2	48.4	163	44	11,878	9,739	
50,000–99,999	6.4	8.9	30.1	144	44	12,155	9,708	2,125
100,000–249,999	6.7	11.8	70.2	185	44	12,002	9,537	
250,000–499,999	5.4	8.4	55.6	170	44	12,798	10,105	2,130
500,000–999,999	6.1	11.6	88.5	208	41	11,885	9,403	
1,000,000 and over	11.5	19.6	69.0	184	40	10,021	7,712	2,331
United States [8]	100.0	100.0	....	110	44	11,058	8,836	1,889

1 Returns were classified by size of place on the basis of preliminary 1950 Census data.
2 Excluding interns, residents, teachers, etc.
3 The basic distribution behind the general population percentages is that given in table 1, p. 2, Bureau of the Census, *Population of Urban Places: April 1, 1950*, Series PC-3, No. 8, Washington, D. C., Jan. 11, 1951. The total of 87,002,817 given in that table is the total population of all urban places (incorporated and unincorporated), excluding the population of urban fringes. The latter areas involve an additional 7,448,892 individuals, making a total of 96,301,639 persons in all urban areas. See: Bureau of the Census, *Population of the United States, Urban and Rural, by States: April 1, 1950*, PC-3, No. 10, Washington, D. C., Feb. 16, 1951, table 2, p. 6. Since the urban fringe population is nowhere given by size of community, this had to be estimated. This was done by arbitrarily allocating the fringe population to places of under 100,000 in the same proportion in which the main urban and rural population was distributed in those places (PC-3, No. 8, p. 2).
4 This distribution of physicians by size of place is from the present survey. An independent distribution was calculated from Fisher-Stevens' *1949 Medical Lists Data*, pp. 5–13, basing the population of the cities in each city-size group on preliminary 1950 Census data. These two independent distributions were surprisingly similar, particularly since the Fisher-Stevens data include residents, whereas the above data do not.
5 These indices are only a rough measure of the relative concentration of physicians. They tell us nothing about whether we have too few, just enough, or too many physicians in terms of medical needs (as determined by some acceptable standards of well-being) as opposed to effective economic demand (i. e., what people are able and willing to pay). It must also be kept in mind that the comparison between population and physicians by size of community (as well as by specific city and State) is necessarily an imperfect one since medical service areas and legal boundaries are seldom exactly the same.
6 The figures in this column were obtained in the following manner. The base of this column is an estimate of 165,000 physicians, including all independent practitioners and all salaried physicians, excluding interns, residents, fellows, medical school personnel, and physicians in the armed forces. The percentage distribution of all physicians by size of community, as obtained in the current survey, was applied to the 165,000 figure. The resultant number of physicians was divided by the population of the given community size (calculated as previously described). These physician-population ratios follow practically the identical pattern as an independent set calculated from Fisher-Stevens' *1949 Medical Lists Data*.
7 Bureau of the Census, *Income of Families and Persons in the United States: 1949*, Series P-60, No. 9, Washington, D. C., Feb. 14, 1951, table 11, p. 22. Data for places under 2,500 population were calculated from table 11 by consolidating rural-farm and rural-nonfarm figures. Only persons 14 years of age and over, with income, were included. The Bureau of the Census did not publish data for 1949 by size of place.
8 Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

Apparently, the low incomes in these great metropolitan centers are not due to the slightly higher average age (40 years as against 44) of the big-city doctors. In fact, if age is held constant, independent physicians under 40 earn least in cities of over a million. (See table 16.) Independent physicians 40–54 years of age, who practice in cities of over a million, average less than their colleagues of the same age in all communities except those with less than 2,500 population. Physicians in cities of over a million, who are older than 55, do slightly better than their younger confreres.

The size-of-community pattern for the incomes of independent physicians is quite different from that of salaried physicians. The former start at a mean net income of $7,109 in communities of under 1,000 inhabitants, rise fairly rapidly to a peak of $14,276 in cities of 250,000–499,999, and then decline sharply to $10,661 in cities of over a million. Salaried physicians show considerably less variation or regularity from city size to city size than independents. (See table 14.)

Temporal changes in average income by size of community have been striking. The outstanding development from 1929–49 is the great increase in the average net income of physicians in places under 5,000 population as compared with the relatively small increase in cities of over a million (table 17). For example, in 1929 the mean net income of independent practitioners in cities of a million or more ($6,900) was more than twice as large as that of physicians in communities under 5,000 inhabitants ($3,200). Two decades later the difference was only 17 percent. Thus, in general, cities of over a million—and not New York alone—fared poorly in the 1929–49 period.

Table 16.—Average Net Income of Physicians Whose Major Source of Medical Income Was From Independent Practice, by Age and Size of Community, 1949

Size of community [1] (population)	Mean net income — Age (years) [2]: Under 30	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over
Under 1,000	$8,072	$9,170	$10,034	$10,094	$9,333	$9,484	$7,072	$5,670	$3,106
1,000–2,499	7,229	9,003	11,674	12,018	11,020	9,888	8,567	6,994	3,358
2,500–4,999	8,962	11,390	12,731	14,006	13,021	14,277	11,284	7,208	4,674
5,000–9,999	7,067	10,510	13,410	14,731	14,767	12,677	11,724	9,495	4,808
10,000–24,999	8,273	10,720	12,891	14,377	15,217	12,003	12,011	9,806	4,088
25,000–49,999	8,604	9,737	13,406	15,622	16,127	15,774	13,479	10,833	5,041
50,000–99,999	9,096	9,699	13,890	15,718	17,431	15,709	13,927	11,460	5,724
100,000–249,999	9,423	10,605	12,740	18,519	15,475	14,528	14,551	10,022	5,718
250,000–499,999	5,742	11,101	13,700	17,291	17,895	16,071	14,020	14,123	6,840
500,000–999,999	5,996	9,602	12,874	16,300	16,523	16,002	13,948	12,600	6,070
1,000,000 and over	5,279	7,270	10,049	11,783	12,225	12,318	13,114	8,460	5,896
United States [3]	6,787	9,800	12,008	14,478	14,867	13,902	13,226	9,806	5,293

1 Returns were classified by size of place on the basis of preliminary 1950 Census data.
2 The column for "All ages" is given in table 14.
3 0.4 percent of the cases were "unknown" on city size. Their mean net income was $11,605. The percentage distribution of independent physicians is as follows: 3.1 (under 30); 11.6; 18.1; 17.6; 13.1; 10.1; 7.8; 6.0; 13.3 (65 and over). The 13.3 is divided as follows: 5.4 (65–69); 4.3 (70–74); 3.6 (75 and over).

Source: U. S. Department of Commerce, Office of Business Economics.

Why, one may well ask, does the average net income of physicians reach a peak in cities of 300,000–399,999, and then decline sharply in the largest cities? The most plausible answer seems to be that given in an earlier study for dentists.[37]

The physician-population ratio is not an ideal measure of the relative supply of physicians, especially for comparisons over time.[38] It is, nevertheless, a fairly good diagnostic tool for the purpose at hand, since it is intended primarily to suggest likely clues towards a better understanding of the effect of community size upon size of physicians' incomes.

Table 17.—Average Net Income of Physicians Whose Major Source of Medical Income Was From Independent Practice, by Size of Community, 1929 and 1949

Size of community [1] (population)	Mean net income, 1929 [2]	Mean net income, 1949	Percent increase in mean net income, 1929–49	Median net income, 1929 [2]	Median net income, 1949	Percent increase in median net income, 1929–49
Under 5,000	$3,200	$9,075	183.6	$2,500	$7,320	192.8
5,000–9,999	5,400	11,624	115.3	4,500	10,140	125.3
10,000–24,999	6,300	12,134	92.6	5,160	10,621	106.2
25,000–49,999	6,900	12,812	85.7	5,600	11,037	97.1
50,000–99,999	7,100	13,166	85.7	5,600	10,921	95.0
100,000–499,999	7,300	13,606	86.4	5,400	11,108	107.4
500,000–999,999	6,800	13,161	93.5	5,200	10,540	102.8
1,000,000 and over	6,900	10,661	54.5	4,700	7,988	70.0
United States	5,700	11,358	106.0	4,100	8,608	115.6

1 Based on preliminary 1950 Census data.
2 Leven, op. cit., p. 35. Leven's U. S. mean is $5,700; the National Income Division's comparable figure is $5,224. Leven's U. S. median is $4,100; the present survey estimated $3,768.

Source: U. S. Department of Commerce, Office of Business Economics.

As community size increases, the number of physicians per 100,000 increases rather markedly, although with some irregularities (table 15). If we combine a few of the city

37 Weinfeld, op. cit., pp. 13 and 14.
38 See: Dickinson, Bradley, and Cargill, op. cit., pp. 3 and 4.

sizes, the increase in physician-population ratios proceeds regularly without aberration as size of community increases.[39] However, the apparent vagaries in the large cities may be due to more than imperfections of the underlying data; they may reflect significant phenomena that are not entirely evident at the present state of our knowledge.

The average net income per earner in the general population also increases as size of place increases (table 15). On the other hand, the average net income per physician increases quite regularly as size of community increases until it reaches a peak in cities of 250,000–499,999, and then in cities of more than 500,000 it *declines* as city size increases.

In the dental article already referred to, an hypothesis was advanced which also seems to apply to physicians. It seems reasonable to assume that the supply of physicians, in 1949, was smallest relative to the effective economic demand for physicians' services in cities having between 250,000 and 500,000 inhabitants. (For dentists it was between 50,000 and 250,000.) In smaller communities, effective demand for physicians' services declined more sharply than the number of physicians per capita, while in larger cities the effective demand for physicians' services increased less rapidly than the number of physicians per capita. As in the case of dentists, much light could be thrown on the above relationship if estimates of per capita income for the general population as well as per capita personal consumption expenditures were available by size of community (and region).

Table 18.—Average Net Income of Physicians Whose Major Source of Medical Income Was from Salaried Practice by Age Group, 1949

Average net income	Age (years)[1]									
	All ages	Under 30	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over
Mean	$8,272	$4,936	$6,000	$8,731	$9,721	$10,220	$9,744	$8,160	$8,030	$6,465
Median	7,555	4,690	6,405	8,153	8,721	9,018	8,391	8,004	7,604	6,046

[1] The percentage distribution of salaried physicians is as follows: 8.7 (under 30); 18.0; 18.8; [illegible]; 10.8; 8.0; 7.0; 5.4; 7.4 (65 and over). The 7.4 is divided as follows: 4.0 (65–69); 2.1 (70–74); 1.3 (75 and over).

Source: U. S. Department of Commerce, Office of Business Economics.

The term "effective economic demand for physicians' services" refers to those services which individuals are able and willing to pay for—regardless of whether they need them. This is not the same, of course, as "need for physicians' services", which represents medical needs as might be determined by some acceptable standard of well-being—regardless of ability to pay.

Finally, it seems a safe general conclusion from the data of tables 12 and 15 that not only are physicians over-concentrated as to geographic area, but also as to community size. Nevertheless, the relative excess or deficit of physicians in relationship to population concentration, as shown in table 15, cannot be regarded as representing the actual situation, but only as suggestive. Too many people who live in rural areas are patients of physicians in middle-sized and large cities, and too many in middle-sized cities seek their physicians in larger places, to allow of any simple comparison of population and physicians. Until studies can be made which overcome the lack of perfect correspondence between medical service area and legal boundary,[40] the available data can only suggest in a general way that communities with fewer than 2,500 inhabitants seem to have a relative deficiency of physicians; that communities between 2,500 and 25,000 population seem to have a fairly even balance between the number of physicians and population; and that cities with over 25,000 population have a relative excess of physicians that becomes larger (with some unaccountable irregularities) as size of city increases.

Age

Like city size, age is one of the most important factors making for income differentials, among physicians as well as among practically all other occupational groups. Professional workers do not begin their earning cycle as early as most other workers. They usually start at a higher level of income, advance faster, and reach a higher peak earnings (after most workers have begun to experience a diminution of earning power); at last, they, too, show a marked falling off in income, particularly after 60 years of age.[41]

This was clearly the pattern of physicians' incomes in 1949. Starting with a mean net income of $6,787 for physicians under 30 years of age,[42] independent practitioners reached their peak income of $14,967 between 45 and 50 years of age, thus more than doubling their average income in the first 20 years of practice. During the next 20 years of practice, the average peak income was halved. (See table 16.)

Salaried physicians followed the same pattern at a somewhat lower level, with salaried income levels being lower than independent for all age levels except 65 years of age and over—suggesting the slightly greater relative security of salaried physicians as compared with their independent colleagues. Although independent physicians 65 years of age and over made less than those under 30, salaried physicians in the older age groups reported more than those in the younger.

Table 19.—Distribution of Physicians and Average Net Income by Class of Worker and Sex, 1949

Sex	All physicians	Major independent	Major salaried	All physicians	Major independent	Major salaried	Major independent		Major salaried	
							Mean net income	Median net income	Mean net income	Median net income
Male	95.9	96.9	92.3	100.0	78.4	21.6	$11,952	$9,823	$8,522	$7,748
Female	4.1	3.1	7.7	100.0	58.2	41.8	7,059	6,001	6,183	5,218
Both sexes	100.0	100.0	100.0	100.0	77.7	22.3	11,858	9,088	8,272	7,555

Source: U. S. Department of Commerce, Office of Business Economics.

The median age of all physicians in 1949 was 44 years. Dentists (in 1948) averaged 43 years; lawyers (in 1947) like physicians averaged 44 years.[43] Independent physicians in 1949 were about 4 years older than salaried physicians (excluding interns, residents, etc.), their median ages being 45 and 41, respectively—as was the case with lawyers (in 1947) as well. Independent dentists averaged 44 years; salaried, 37 (in 1948). About a quarter of a century ago (1926), the average age of independent medical practitioners was practically the same (46 years) as today.[44] No comparable data on salaried physicians are known to the present writer.

[39] This phenomenon was also observed for dentists, although in that case no irregularities occurred for any size of community for which physician-population ratios could be computed. See: Weinfeld, op. cit., p. 14, table 8.

[40] For an example of a start in the direction of delineating valid medical service areas, see: Frank G. Dickinson, "Medical Service Areas in the United States", *Journal of the American Medical Association*, April 5, 1947. Also see: Frank G. Dickinson and Charles E. Bradley, *Medical Service Areas*, American Medical Association, Chicago, 1951. However, even such a desirable refinement as the medical service area has its shortcomings, not the least of which is the fact that the area for specialists (to say nothing of different specialties) is hardly the same as that for G. P.'s. Indeed, a proliferation of maps seems inevitable for a truly refined analysis, and the problem of keeping them up to date with general and medical technological changes and population movements presents no mean task.

[41] See: William Weinfeld, "Individual Earners and Earnings," in Roy G. Blakey, William Weinfeld, Jesse R. Dunn, and Alex L. Hart, *Analyses of Minnesota Incomes, 1938–39*, University of Minnesota Press, Minneapolis, 1944, p. 74.

[42] The number of physicians in the "Under 30" age group who were under 25 years of age is negligible.

[43] Weinfeld, op. cit., table 8, p. 14 (dentists) and p. 23 (lawyers).

[44] From a study by Allon Peebles based on the 1927 *American Medical Directory*, cited by Leven, op. cit., p. 43.

Sex

According to the 1940 Census, 4.6 percent of the physicians in practice at that time were women.[45] The Women's Bureau indicates that this percentage "has shown little change in the past 40 years".[46] Approximately 4.1 percent of the physicians who reported in the present survey were women. It is not clear whether this represents a slight under-reporting or an actual decline (table 19).

Whereas 22 percent of the male physicians were salaried in 1949, practically twice as many of the women were salaried [47] and salaried physicians tend to earn less money.

Table 20.—Percentage Distribution of Physicians and Average Net Income by Class of Worker and Size of Community, 1949

Size of community [1] (population)	All physicians		Major independent		Major salaried		Mean net income			
							Major independent		Major salaried	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under 1,000	4.9	4.8	5.0	4.9	4.7	5.7	$10,610	$5,926	$8,090	$5,227
1,000–2,499	5.3	3.2	6.0	3.6	2.7	2.6				
2,500–4,999	5.2	3.0	5.0	2.8	5.8	3.2				
5,000–9,999	6.5	4.0	6.7	4.3	6.6	3.4				
10,000–24,999	9.7	8.2	10.0	8.6	8.6	7.3				
25,000–49,999	9.2	9.7	8.8	10.1	10.0	9.1				
50,000–99,999	8.9	9.0	8.9	7.5	9.1	8.7	13,219	7,781	8,916	5,939
100,000–249,999	11.1	11.0	11.1	12.0	11.0	11.2				
250,000–499,999	8.4	8.4	8.2	8.7	8.8	7.8				
500,000–999,999	11.4	13.9	10.8	12.4	14.3	16.0	13,821	7,780	8,048	6,373
1,000,000 and over	19.3	20.2	19.1	25.1	20.2	27.8	10,720	6,021	8,372	4,661
United States [2]	100.0	100.0	100.0	100.0	100.0	100.0	11,963	7,069	8,522	5,183

[1] Based on preliminary 1950 Census data.
[2] Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

Another characteristic of women physicians was that they had a slightly greater tendency to practice in the larger cities—where incomes also run a little low. (See table 20.) Likewise, an appreciably larger proportion of women were employed part-time, both among independent and salaried practitioners. Although a somewhat larger proportion of independent women practitioners were full specialists, women traditionally went into the less lucrative specialties, like pediatrics. Women physicians clearly earn less than men, but the real differences are undoubtedly magnified by differential factors, such as those cited above.[48] (See tables 20, 21, and 22 for further data.)

Table 21.—Average Net Income of Full-Time and Part-Time Physicians by Class of Worker and Sex, 1949

Class of worker and average income	All physicians			Full time			Part time		
	Male	Female	Excess of male income over female (percent)	Male	Female	Excess of male income over female (percent)	Male	Female	Excess of male income over female (percent)
Major independent:									
Mean net income	$11,963	$7,069	69.3	$12,836	$8,312	54.6	$4,160	$2,513	65.5
Median net income	$9,529	$5,491	73.7	$10,444	$7,038	47.3	$3,488	$1,518	63.9
Percent	88.0	3.1		97.4	2.6		93.7	6.3	
Major salaried:									
Mean net income	$8,522	$5,183	64.4	$8,705	$6,075	44.3	$4,407	$2,656	65.2
Median net income	$7,748	$5,218	48.5	$7,899	$6,109	29.0	$3,900	$2,332	58.0
Percent	92.3	7.7		99.9	0.1		72.1	27.9	

Source: U. S. Department of Commerce, Office of Business Economics.

[45] See: Bureau of the Census, *Population: Volume III, Labor Force: Part 1, United States Summary*, Washington, D. C., 1943, table 58, p. 75.
[46] Women's Bureau, *The Outlook for Women in Occupations in the Medical Services: Women Physicians*, Bulletin 203, No. 7, Washington, D. C., 1945, p. 1.
[47] *Medical Economics* magazine reported that 10 percent of the men and 22 percent of the women in 1947 were salaried (*loc. cit.*, June 1949, p. 78). However, these figures are not at all comparable with those of the present study in this respect because *Medical Economics* questionnaires went "almost entirely to physicians in active, private practice", thus missing most salaried physicians, particularly women (*loc. cit.*, September 1948, p. 65).

Table 22.—Average Net Income of Physicians by Degree of Specialization, Class of Worker, and Sex, 1949

Class of worker and average income	General practice		Partly specialized		Fully specialized		Other	
	Male	Female	Male	Female	Male	Female	Male	Female
Major independent:								
Mean net income	$8,068	$5,160	$11,857	$6,987	$16,186	$8,817	.....	.....
Median net income	$7,067	$3,800	$10,031	$4,092	$12,791	$7,188	.....	.....
Percent [1]	41.6	33.7	38.2	17.8	49.4	48.5	.....	.....
Major salaried:								
Mean net income	$6,482	$4,147	$7,309	$4,732	$9,085	$5,775	$8,739	$4,484
Median net income	$6,250	$4,267	$6,891	$4,714	$8,144	$5,000	$8,232	$4,433
Percent [1]	12.3	14.4	9.5	11.9	65.4	58.0	12.7	13.1

[1] This is the percentage of cases, for a given sex, found in each degree of specialization. The sum of the percentages for independent male practitioners should add up to 100, etc.
[2] Detail will not necessarily add to total because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics.

Full-time versus part-time practice

In 1949, approximately 92 percent of all the physicians in the country considered themselves employed on a full-time basis, and only 8 percent said they worked part time. The latter group includes all physicians who earned any income at all from medical work during the year 1949. Part-time employment seemed equally infrequent among independent as among salaried physicians (table 23).

Table 23.—Average Net Income of Full-Time and Part-Time Physicians by Class of Worker, 1949

Item	All physicians		Major independent		Major salaried	
	Full time	Part time	Full time	Part time	Full time	Part time
Mean net income	$11,187	$4,053	$12,583	$4,059	$8,005	$4,020
Median net income	$9,402	$2,604	$10,352	$2,308	$7,759	$3,213
Percent	92.0	8.0	91.7	8.3	92.9	7.1
Median age	(1)	(1)	44	65	41	40
Percent 65 years of age and over	(1)	(1)	9.7	51.1	5.9	24.3

[1] Not calculated.

Source: U. S. Department of Commerce, Office of Business Economics.

All full-time physicians earned three or four times more than their part-time colleagues. Full-time independent physicians alone, with a mean net income of $12,583 in 1949, earned three times more than part-time independent physicians, the latter reporting a mean net income of $4,059. The incomes of part-time physicians are understandably low, since these persons tended to be well along in years or were ill or incapacitated. Many of the part-time physicians were partly retired. The average age of part-time independent practitioners was 65, as compared with 44 for their full-time co-workers. Part-time salaried physicians, on the other hand, were only 5 years older (46 years) than their full-time colleagues, who averaged 41 years.

[48] Women in independent practice tend to be about 2 years older than men (the median ages are 47 and 45). Likewise for women in salaried practice (43 and 41). All women dentists are only about a year older than men (45 and 44).

TECHNICAL NOTES

Since 1933 the Department of Commerce has made numerous mail surveys in order to provide otherwise unobtainable information needed for compiling its official estimates of national income. One of the better known series of surveys has been that pertaining primarily to independent professional practitioners. In the past these questionnaire studies have covered such varied groups as certified public accountants, chiropodists, chiropractors, consulting engineers, dentists, lawyers, nurses, osteopathic physicians, physicians and surgeons, and veterinarians. These surveys generally provide valuable by-product data which furnish an informative description of the trends in the economic conditions in the various professions.

Prior to 1950, the Department had conducted four large-scale surveys (and one small interim inquiry—in 1949) of physicians' income: in 1933, 1935, 1937, and 1942. In 1950 the Office of Business Economics of the Department of Commerce and the Bureau of Medical Economic Research of the American Medical Association jointly undertook an unusually large research venture—the 1950 Survey of the Medical Profession—of which the present article is the first tangible result. The present study—for all its detail—scarcely scratches the surface. Accordingly, it is anticipated that the Bureau of Medical Economic Research (under the direction of Frank G. Dickinson, Ph. D.), as well as Government agencies other than the Department of Commerce, will eventually wish to dig deeper into the mine of statistical information which the physicians of America have so generously provided.

THE WHITE QUESTIONNAIRES

In the latter part of April 1950 the Department of Commerce mailed out nearly 100,000 white questionnaires to half the living physicians (inactive as well as active; and to interns, residents, fellows, etc., as well as to others) in the United States. The physicians were asked, on a voluntary basis, to provide information on such items as age, sex, form of practice; degree and field of specialization; certification by specialty boards, full time or part time practice; and location of practice (city and State). In addition, they were asked to give their gross income; costs of independent practice; net income from independent practice; salary income; total net income from all medical work; gross income received from patients as personal consumption expenditures for physicians' services; and home-and-office versus hospital-and-clinic gross receipts. This questionnaire (as contrasted with buff and green questionnaires mailed later—to be described in subsequent paragraphs) was not followed up, nor was it identified in any manner. All data in it pertained to 1949.

The 100,000 physicians represented every other name in the alphabetically arranged IBM card file of all living physicians in the United States maintained by the Bureau of Medical Economic Research of the American Medical Association.

Inasmuch as no figures are available to indicate the precise composition of the list of physicians to which questionnaires were sent, it is difficult to give exact figures as to the rate of response. However, a fair estimate can be made. Of the approximately 99,230 forms mailed, 3,167 (or 3.2 percent) were returned as undeliverable by the time of the cut-off date (October 24), and 41,088 came back as replies—although not all usable.

Excluding interns, residents, fellows, medical school teachers, and physicians in the armed forces (as well as fully retired physicians, those engaged exclusively in nonmedical work, and the deceased), about 41.0 percent of the physicians (salaried as well as independent) who should have replied made usable returns. These 29,878 returns represent roughly 18 percent of the physicians in active civilian practice.

To conform with Census Bureau practice, medical school teachers and physicians in the armed forces were excluded from the analysis. Interns, residents, and fellows are included as physicians by the Census Bureau, but these were excluded as well, primarily because of the difficulty of obtaining the money value of their kind of income (food, lodgings, etc.), but also because they are functionally part way between students and full-fledged practitioners. It is recognized, of course, that for many functional analyses they must be included, if a distorted picture is not to result. None of the exclusions affects independent practitioners, since all the excluded groups are restricted to salaried personnel. Subsequent analysis may wish to study the excluded groups, and it is highly desirable that this be done.

Comparative data against which the sample results could be checked were practically nonexistent. Results from the 1950 Census were still not available as the article went to press—not even a simple count of the number of independent and salaried physicians for the country as a whole.

The only other important potential source of data was the 1950 edition of the *American Medical Directory*. While its few summary tables were of considerable help in a number of respects, the *Directory* was not satisfactory as a source of benchmark data because of the great amount of work which would have been entailed in tabulating the better than 200,000 listings. The *Directory's* separately bound summary compilation entitled *Survey of Number of Physicians in the United States by County* (Chicago, 1950) did not permit any step-of-community comparisons, although it had a wealth of other data. Earlier tabulations—say, by age groups—based on preliminary *Directory* data were of no help because they included all retired physicians, as well as interns and residents.

In the end, only one factor was adjusted for; namely, the distribution of physicians by States. Three sources provided data on the distribution of physicians by States, and they agreed fairly closely. The data of the Medical Mailing Service of Chicago (a commercial mailing firm) were chosen for benchmark purposes because they contained no retired physicians, no interns, and no military physicians. It was necessary only to subtract out the non-Federal residents from the benchmark data to make them comparable to the survey data.

Some of the States showed significant under- and over-reporting. Arizona, Montana, Minnesota, and North Dakota each yielded 24-30 percent more returns than they should have. The Far West region as a whole yielded 18 percent more, and Northwest 11 percent. Rhode Island, South Carolina, Mississippi and Louisiana each reported 17-22 percent fewer returns than they should have. The Southeast region as a whole reported 12 percent fewer, while Southwest reported 5 percent fewer.

To adjust for these discrepancies, 1,007 white returns were randomly discarded in the proper proportions in the proper States, and 1,007 buff returns were added so as to give the correct proportion of returns for each State. The over-all effect of these corrections was quite minor: the mean net income for all physicians dropped from $11,103 to $11,058, a 0.4 percent decrease.

A number of the past surveys, which have had what were felt to be reliable benchmark data to compare with, have reported over-response from full specialists. In correspondence with the present author, *Medical Economics* magazine indicated that in their 1948 survey (covering 1947 incomes) 58.8 percent of their returns were from full specialists. Since this figure was felt to be too high, the returns were adjusted to a figure of 31.1 percent full specialists based on data from the Directory Department of the American Medical Association. On the other hand, the survey of Canadian medical incomes conducted in 1947 by the National Income Unit of the Dominion Bureau of Statistics found that "The proportion of full-time specialists reporting in the survey of incomes was *significantly lower* (my italics) than the proportion of full-time specialists in the whole profession * * *."[2]

The present writer did not feel that he could say whether the returns of the present survey were too high, too low, or exactly right in the proportion of usable returns received from general practitioners, part specialists, or full specialists. As a consequence, the published figures were not weighted with regard to degree of specialization.

The reason for not adjusting for possible bias in the reporting of full specialists in the present study may be explained simply. The only potential basis for comparison are the data derived from the *1950 Directory*. In 1949, according to the findings of the present study, 43.0 percent of the independent and salaried physicians in private practice (independent practitioners and their physician-employees) reported themselves as full specialists, and 40.1 percent as general practitioners. Comparable *Directory* data indicate that in 1949 only 38.5 percent of the private practitioners reported themselves to the AMA as full specialists and 48.2 percent as G. P.'s. (See table 1A.)

We do not really know the reason for the discrepancy between the above set of figures. However, it seems quite plausible that what could have produced the apparent "over-response" from full specialists in the present study is the following. When some physicians replied to the anonymous questionnaires in the 1950 Survey of the Medical Profession they tended to designate themselves as full specialists if they thought of themselves as such. When they filled in the AMA Directory Department cards, *complete with their name and address*, they were somewhat more modest, since the designations would be published.

Thus, some respondents to the survey who perhaps should not have called themselves full specialists may have done so. That act alone would not necessarily mean that they entered income, age, or size of community incorrectly as well. But to have weighted the returns in such cases to obtain the "correct" distribution by degree of specialization would have done just that. On the other hand, if specialists did make too many returns, their presence in the sample would automatically *overstate* the true average income, *understate* the true average age, etc. In such a case the distribution should have been adjusted if reliable and adequate benchmark data were available. Such data do not appear to exist either for independent or salaried physicians.

Table 1A.—Comparison of Independent Estimates of Degree of Specialization Among Physicians, 1929 and 1949

Source of data	All physicians			Major independent		
	General practice (percent)	Partly specialized (percent)	Fully specialized (percent)	General practice (percent)	Partly specialized (percent)	Fully specialized (percent)
Levon, 1929 [1]	52.0	20.8	28.3	55.9	20.9	23.2
Present study, 1949 [2]	37.8	19.3	43.8	41.2	18.2	40.6
Physicians in private practice (independent and salaried):						
Present study, 1949 [3]	40.1	17.9	42.0	----------	----------	----------
American Medical Directory, 1950 [4]	48.2	13.3	38.5	----------	----------	----------

[1] *Op. cit.*, pp. 50-1. Levon's category "All physicians" excludes interns and residents.

[2] The present study also excludes both interns and residents. The figure 37.8 includes the 2.8 percent of physicians who were designated as "Other" (salaried only).

[3] "Physicians in private practice," is the only possible basis on which the present study and the *American Medical Directory, 1950*, could be compared. The designation includes only independent practitioners and their physician-employees. This group was picked out from the data of the present study to afford fairly strict comparability with the *Directory*.

[4] Frank V. Cargill, editor, *American Medical Directory, 1950*, American Medical Association, Chicago, 1950, table 3, p. 11. Calculated by the author from columns 4, 5, and 6, exclusive of the physicians on the "Government Service" line. For the most part, the data in this volume are as of July 1949. See: Frank G. Dickinson, Charles B. Bradley, and Frank V. Cargill, *Comparisons of State Physician-Population Ratios for 1935 and 1949*, Bulletin 78, Bureau of Medical Economic Research, American Medical Association, Chicago, 1950, p. 3.

In the first Nation-wide survey of physicians' incomes, conducted in 1929 (covering 1928 incomes) by the American Medical Association, 40 percent of the physicians reported themselves as full specialists, but the author of the report on that survey was careful to point out that "The percentage of specialists is found in each instance to be higher in the study than for the corresponding classification in the directory." See: R. O. Leland, *Income from Medical Practice*, American Medical Association, Chicago, 1931, pp. 12 and 13.

Likewise, the study made in 1928 by H. G. Wolfenden (cited by Levon, *op. cit.*, p. 60) found that 41 percent of the 1918 graduates and 33 percent of the 1920 graduates of 57 Class A medical schools had already become full specialists. But clearly, all physicians in active practice in 1920 would have shown something less than the 41 percent of full specialists shown by the relatively young (i. e., young in 1928) class of 1918. Even today the percentage of full specialists among men over 40 years of age is significantly lower than for those under 40. Two decades ago the contrast must have been even more marked.

Source: U. S. Department of Commerce, Office of Business Economics.

THE BUFF AND GREEN QUESTIONNAIRES

Because of limited funds, questionnaires in the professional surveys have generally, but not always, been addressed only to a sample of the profession. The proportion of usable questionnaires returned has varied from 10 to 30 percent of the entire mailing. Naturally, this has always raised a question concerning the extent to which the returns received represented the entire group sampled. Accordingly, with the encouragement of the Bureau of the Budget and the approval of the American Medical Association, it was decided to attempt some experimental follow-up mailings. In order not to affect comparability with past Department of Commerce estimates, one questionnaire (the white) was designed to have no follow-up, and hence no identifying code number. To determine the effect of identification alone, as well as to study follow-up effects, the buff questionnaire was designed. To permit the collection of data for the 1948-49 period, as well as to study the effects of follow-up returns, the green questionnaire was designed.

About a month after mailing the white questionnaire, approximately 10,000 buff and 15,000 green questionnaires were mailed out. The buffs represented every tenth physician not selected for the white mailing, the greens every sixth physician not hitherto sampled.

The content of the buff questionnaire is exactly the same as the white. However, both the outside and return envelopes were identified by the code number which the Bureau of Medical Economic Research of the AMA assigns to each physician. The physicians were explicitly apprised of the use of the code number in the covering letter mailed with the questionnaire; namely, to make it possible to send additional mailings to the nonrespondents.

The green questionnaire was very similar for the most part to the white, except that it covered five years (1944-49) of income information (the whites and buffs were for 1949 only) and asked for five years of data on salaries and wages paid to employees, as well as the number of employees—items not on the white form. Thus, there were about three times as many items on the green as on the white form, but—more important—the average independent practitioner answering a green return had 5 to 6 times as many income items to look up as the average white respondent. In spite of these great differences, the *estimated rate of return* for the first mailing of the greens, excluding interns, residents, etc., was 36.0 percent as against 42.2 percent for the buffs, and 41.0 percent for the whites. Like the buff mailings, the green carried code numbers for later follow-up work.

In all, three mailings were made of the green forms and three of the buff. The first wave of the greens went out on May 18, the first of the buffs on May 22. On August 3 the second wave of both the buffs and greens were mailed, and on October 16, the third and last wave of both forms were finally mailed. This is the first Commerce Department professional survey in which the follow-up technique was used.

[1] See: William Alan Richardson, "Physicians' Incomes," *Medical Economics*, September 1948 through June 1949 (excluding January 1949). See pp. 67, 68, and 71 in the September 1948 article for a descriptive account of the weighting procedure used.

[2] See: (Kathleen James) *Survey of Incomes in the Medical Profession in Canada in 1939, 1944, 1945, and 1946*, Dominion Bureau of Statistics, Ottawa, Canada, 1948, p. 4.

THE EFFECT OF IDENTIFICATION

On the first buff mailing, only 5 out of every thousand physicians who replied had obliterated the code number. Moreover, since the rate of return for buffs and whites was practically identical, it seems unlikely that any significant proportion of physicians failed to respond to the buffs merely because of the use of identifying code numbers. About 0.6 percent of the respondents to the first green mailing obliterated the code number, and another 0.8 percent used their own envelopes—thus eliminating the code number, but not necessarily deliberately. (Only 0.06 percent of the first-wave buffs used their own personal envelopes.)

THE EFFECT OF FOLLOW-UP MAILINGS

To judge from the buff follow-up returns, the average net income of physicians showed no consistent upward or downward trend. The green returns, on the other hand, showed a downward trend for independent physicians and an upward trend for salaried. (See table 2A.) Several statistical tests were applied, but because of technical difficulties their results would have to be highly qualified to be meaningful. It is, therefore, difficult to say whether the results of any given mailing are significantly different, statistically speaking, from other mailings. Earlier studies also uncovered conflicting evidence on the effects of follow-up returns.

Seven cites contradictory evidence on follow-up results for physicians. In the national C. O. M. C. sample, on the one hand, the follow-ups yielded lower average incomes, although this is attributed, at least in part, to the nature of the appeal used in the follow-up letter; namely, that physicians should reply even if they felt their cases to be atypical.[3] On the other hand, a test study in three Vermont communities eventually attained complete response by a combination of mail and interview techniques. The two groups showed practically no difference in average gross income. Moreover, "the reasons for the physicians' failure to reply to the mailed questionnaire were tabulated and it was established that failure to reply was not in any way associated with the size of income."[4]

In a recent Canadian survey of physicians' incomes,[5] the follow-up technique was also used, but no report was made on the results obtained from the several waves of response. However, by means of personal interviews, the survey also obtained a small number of returns from an incomplete sample of the nonrespondents to the mail questionnaires. It was concluded that the results obtained from the mail questionnaires were not significantly different from those obtained by the interview technique.

On the other hand, in an earlier study of dentists' incomes by the same Canadian group,[6] a similar comparison of respondents and nonrespondents indicated that respondents to the mail questionnaires reported significantly higher average net incomes than the respondents to the personal interviews.

Table 2A.—White, Buff, and Green Returns: Mean Net Income, 1949

Item	White returns	Buff returns			Green returns		
		Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
Major independent:							
Mean net income	$11,868	$11,320	$12,240	$11,614	$11,573	$11,076	$10,216
Sample size (percent)	77.7	98.3	63.2	94.4	76.8	82.8	85.0
Sample size (number)	23,213	2,303	599	303	2,994	831	386
Major salaried:							
Mean net income	$8,272	$8,229	$7,000	$8,276	$8,506	$8,325	$9,327
Sample size (percent)	22.3	21.5	10.8	15.6	23.4	17.2	14.4
Sample size (number)	6,658	497	110	97	895	165	65

Source: U. S. Department of Commerce, Office of Business Economics.

[3] *Op. cit.*, pp. 13 and 14.
[4] *Ibid.*, p. 8, footnote.
[5] *Op. cit.*, p. 4.
[6] (Kathleen Mutchl), *Survey of Incomes in the Profession of Dentistry in Canada, 1941 to 1944*, Dominion Bureau of Statistics, Ottawa, Canada, 1946.

National Income and Corporate Profits, First Quarter 1951

[*Continued from page 8*]

Compared with a year ago, profit movements by industries diverge to some extent due to the fact that the current business expansion is based so largely upon military needs and business capital expenditures. Some of the industries upon which heavy dependence is placed for military goods and the essential ingredients of their production are among those reporting the largest increases over a year ago. For example, machinery, metals, rubber and petroleum are among those recording better-than-average increases.

Among the industries not directly related to defense, the rates of increase have varied considerably over a year ago. The textile and paper industries, for example, reported the largest increases, while the tobacco and printing industries showed the smallest gains. Railroads with their capacity being utilized to a greater extent are doing better relatively than utilities on the year-to-year comparison.

Because of the general incidence of the large increase in corporate taxes at the beginning of this year, few industries were able to report higher net profits in the first quarter than in the fourth quarter.

For industry as a whole, profits after taxes were one-third larger than in the initial quarter of 1950. As a percentage of total national income profits after taxes fell off in the first quarter to 8.7 percent, compared with 9.5 percent in 1950, the latter having been realized in other peak business years such as 1929, 1941, and 1948. In the war years of excess profit taxation the ratio was lower than currently.

New national income publication

The complete estimates of the national income and product for 1950 have just been compiled and customary revisions made of the figures for the two preceding years 1948 and 1949. Summary totals for the years 1948 through 1950 are given in table 3 (page 8), together with recent quarterly figures.

This year the completely revised data for the years 1948 through 1950 are given in a separate publication—*National Income*—A Supplement to the *Survey of Current Business*—which contains a comprehensive description of national income concepts and methodology, as well as a complete set of data from 1929 through 1950. Announcement of the availability of this publication and its major features will be found on page 7 of this issue.

Table 4.—Corporate Profits Before Tax, by Major Industries, Quarterly

[Millions of dollars]

Item	1948				1949				1950				1951
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
All industries, total	8,317	8,554	8,004	7,387	7,369	6,223	7,387	8,838	7,468	9,348	11,801	12,652	12,216
Mining	350	398	455	438	349	307	242	226	226	316	442	482	390
Manufacturing	4,804	4,855	4,709	4,771	4,066	3,407	3,887	5,020	4,018	5,231	6,701	7,301	7,437
Durable-goods industries	2,105	2,192	2,204	2,284	2,153	1,803	2,007	1,574	2,105	3,086	3,706	4,400	4,005
Nondurable-goods industries	2,039	2,663	2,475	2,487	1,913	1,604	1,880	1,846	1,858	2,145	2,995	2,902	3,372
Transportation	239	648	604	421	209	336	384	382	225	440	704	733	300
Communication and public utilities	414	376	348	405	460	430	422	474	500	540	620	603	709
All other industries	2,504	2,848	2,740	1,952	2,384	2,213	2,432	3,006	2,420	2,681	3,305	3,564	3,340

Source: U. S. Department of Commerce, Office of Business Economics.